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# Air Pollution Regulations in State Implementation Plans: North Dakota

**Abcor Inc, Wilmington, MA Walden Div**

**Prepared for**

**Environmental Protection Agency, Research Triangle Park, NC**

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Office of Air Quality
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Research Triangle Park NC 27711

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# Air Pollution Regulations in State Implementation Plans:
## North Dakota

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This document has been produced in compliance with Section 110(h)(1) of the Clean Air Act amendments of 1977. The Federally enforceable regulations contained in the State Implementation Plans (SIPs) have been compiled for all 56 States and territories (with the exception of the Northern Mariana Islands). They consist of both the Federally approved State and/or local air quality regulations as indicated in the Federal Register and the Federally promulgated regulations for the State, as indicated in the Federal Register. Regulations which fall into one of the above categories as of January 1, 1978, have been incorporated. As mandated by Congress, this document will be updated annually. State and/or local air quality regulations which have not been Federally approved as of January 1, 1978, are not included here; omission of these regulations from this document in no way affects the ability of the respective Federal, State, or local agencies to enforce such regulations.

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# Air Pollution Regulations in State Implementation Plans:

## North Dakota

by

Walden Division of Abcor, Inc.
Wilmington, Massachusetts

Contract No. 68-02-2890

EPA Project Officer: Bob Schell

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air, Noise, and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

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Publication No. EPA-450/3-78-084

# INTRODUCTION

This document has been produced in compliance with Section 110(h)(1) of the Clean Air Act Amendments of 1977. The Federally enforceable regulations contained in the State Implementation Plans (SIPs) have been compiled for all 56 States and territories (with the exception of the Northern Mariana Islands). They consist of both the Federally approved State and/or local air quality regulations as indicated in the Federal Register and the Federally promulgated regulations for the State, as indicated in the Federal Register. Regulations which fall into one of the above categories as of January 1, 1978, have been incorporated. As mandated by Congress, this document will be updated annually. State and/or local air quality regulations which have not been Federally approved as of January 1, 1978, are not included here; omission of these regulations from this document in no way affects the ability of the respective Federal, State, or local agencies to enforce such regulations.

There have been recent changes in the Federal enforceability of parking management regulations and indirect source regulations. The October, 1977, appropriation bill for EPA prohibited Federal enforcement of parking management regulations in the absence of specific Federal authorizing legislation. Federally promulgated parking management regulations have, therefore, been suspended indefinitely. Pursuant to the 1977 Clean Air Act Amendments, indirect source regulations may not be required for the approval of a given SIP. Consequently, any State adopted indirect source regulations may be suspended or revoked; State adopted indirect source regulations contained in an applicable SIP are Federally enforceable. More importantly, EPA may only promulgate indirect source review regulations which are specific to Federally funded, operated, or owned facilities or projects. Therefore, the Federally promulgated indirect source regulations appearing in this document are not enforceable by EPA except as they relate to Federal facilities.

Since State air quality regulations vary widely in their organization, content, and language, a standardized subject index is utilized in this document. Index listings consist of both contaminant and activity oriented categories to facilitate usage. For example, for regulations which apply to copper smelters, one might look under sulfur compounds (50.2), particulate matter process weight (50.1.1), or copper smelters (51.15). Federal regulations pertaining to a given State immediately follow the approved State and local regulations.

Additionally, a summary sheet of the information included in each comprehensive document is presented prior to the regulatory text to allow one to quickly assess the contents of the document. Specifically, the summary sheets contain the date of submittal to EPA of each revision to the SIP and the date of the Federal Register in which the revision was either approved or disapproved by EPA. Finally, a brief description or reference of the regulation which was submitted is also included.

This document is not intended to provide a tool for determining the enforceability of any given regulation. As stated above, it is intended to provide a comprehensive compilation of those regulations which are incorporated directly or by reference into Title 40, Part 52, of the Code of Federal Regulations. Consequently, the exclusion of a Federally approved regulation from this document does not diminish the enforceability of the regulation. Similarly, the inclusion of a given regulation (for example, regulations governing pollutants, such as odors, for which there is no national ambient air quality standards) in this document does not, in itself, render the regulation enforceable.

# SUMMARY SHEET

# OF

# EPA-APPROVED REGULATION CHANGES

# NORTH DAKOTA

| Submittal Date | Approval Date | Description |
|---|---|---|
| 5/26/76 | 5/26/77 | R23-25-01 THRU R23-25-11;<br>R23-25-12 THRU R23-25-15;<br>APPENDIX to R23-25-12<br>R23-25-13 |

## FEDERAL REGULATION

| Section Number | Description |
|---|---|
| 52.1824 | Regulation for Review of New or Modified Indirect Sources |
| 52.1829 | Regulation for Prevention of Significant Deterioration<br>(Note: 52.21 (b), (c), (d), (e), (f) are for purposes of (a) providing for preconstruction review by the administrator of federally owned or operated stationary sources and stationary sources located on federal or Indian lands; and (b) permitting federal managers and Indian governing bodies to propose redesignation in accordance with the procedures of 52.21 (c). |

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- 2.0 GENERAL PROVISIONS AND ADMINISTRATIVE PROCEDURES
- 3.0 REGISTRATION CERTIFICATES, OPERATING PERMITS AND APPLICATIONS
- 4.0 AIR QUALITY STANDARDS (PRIMARY AND SECONDARY)
  - 4.1 PARTICULATES
  - 4.2 SULFUR DIOXIDE
  - 4.3 NITRIC OXIDES
  - 4.4 HYDROCARBONS
  - 4.5 CARBON MONOXIDE
  - 4.6 OXIDANTS
  - 4.7 OTHERS
- 5.0 VARIANCES
- 6.0 COMPLIANCE SCHEDULES
- 7.0 EQUIPMENT MALFUNCTION AND MAINTENANCE
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- 9.0 AIR QUALITY SURVEILLANCE AND SOURCE TESTING
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- 50.2 SULFUR COMPOUNDS
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- 51.2 COAL OPERATIONS (includes Cleaning, Preparation, Coal Refuse Disposal Areas, Coke Ovens, Charcoal Kilns, Related Topics)
- 51.3 CONSTRUCTION (includes Cement Plants, Materials Handling, Topics Related to Construction Industry)
- 51.4 FERROUS FOUNDRIES (includes Blast Furnaces, Related Topics)
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- 51.6 FUEL BURNING EQUIPMENT (coal, natural gas, oil) - $SO_2$ (includes Fuel Content and Other Related Topics)
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- 51.12 NUCLEAR ENERGY FACILITIES (includes Related Topic)
- 51.13 OPEN BURNING (includes Forest Management, Forest Fire, Fire Fighting Practice, Agricultural Burning and Related Topics)
- 51.14 PAPER PULP; WOOD PULP AND KRAFT MILLS (includes Related Topics)
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## R23-25-01 GENERAL PROVISIONS

### (2.0) 1.010 PURPOSE

It is the purpose of these air quality standards and emission regulations to state such requirements as shall be required to maintain or obtain reasonable levels of air quality consistent with the protection of health and the prevention of injury to plant, animal life and property in the State of North Dakota, to promote the economic and social development of the State; and to provide for the comfortable enjoyment of the natural attractions of the State to the greatest extent practical.

### (2.0) 1.020 SCOPE

These air quality standards and emission regulations apply to any source or emission existing partially or wholly within the State of North Dakota.

### (15.0) 1.030 AUTHORITY

The North Dakota State Department of Health has been authorized to provide and administer these regulations under the provisions of Section 23-25-01 through Section 23-25-10 of Chapter 23-25 of the North Dakota Century Code.

### (1.0) 1.040 DEFINITIONS

As used in these regulations, except as otherwise specifically provided or where the context indicates otherwise, the following words shall have the meanings ascribed to them in this section:

(1) "Act" shall mean Section 23-25-01 through Section 23-25-01 of Chapter 23-25- of the North Dakota Century Code.

(2) "Air contaminant" shall mean dust, fumes, mist, smoke, other particulate matter, vapor, gas, or any combination thereof, not including water vapor, water mist, or steam condensate.

(3) "Air pollution" shall mean the presence in the outdoor atmosphere of one or more air contaminants in such quantities and duration as to threaten or endanger or is injurious to human health or welfare, animal or plant life, or property.

(4) "Ambient air" shall mean the outdoor air that envelops or surrounds the earth.

(5) "ASME" shall mean the American Society of Mechanical Engineers, 345 East 47th Street, New York, New York.

(6) "ASTM" shall mean the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania.

(7) "Control equipment" shall mean any device or contrivance which prevents or reduces emissions.

(8) "Department" shall mean the North Dakota State Department of Health.

(9) "Emission" shall mean a release of air contaminants into the ambient air.

(10) "Existing" shall mean equipment, machines, devices, articles, contrivances or installations which are in being or have been purchased on or before the effective date of these regulations; except that any existing equipment, machine, device, article, contrivance or installation which is altered, repaired or rebuilt after the effective date of these regulations shall be reclassified as "new" if such alteration, rebuilding, or repair results in the emission of an additional or greater amount of air contaminants.

(11) "Fuel burning equipment" shall mean any furnace, boiler apparatus, stack, or appurtenances thereto used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer.

(12) "Fugitive dust" shall mean solid airborne particulate matter emitted from any source other than through a stack or chimney.

(13) "Garbage" shall mean petrescible animal and vegetable wastes resulting from the handling, preparation, cooking and consumption of food, including wastes from markets, storage facilities, handling and scale of produce and other food products.

(14) "Heat input" shall mean the aggregate heat content of all fuels whose products of combustion pass through a stack or stacks. The heat input value to be used shall be the equipment manufacturer's or designer's guaranteed maximum input, whichever is greater.

(15) "Incinerator" shall mean any article, machine, equipment, device, contrivance, structure or part of a structure used for the destruction of garbage, rubbish, or other wastes by burning or to process salvageable material by burning.

(16) "Installation" shall mean any property, real or personal, including but not limited to processing equipment, manufacturing equipment, fuel burning equipment, incinerators, or any other equipment, or construction, capable of creating or causing emissions.

(17) "Multiple chamber incinerator" shall mean any article, machine, equipment, contrivance, structure or part of a structure used to dispose of combustible refuse by burning, consisting of three or more refractory lined combustion furnaces in series physically separated by refractory walls, interconnected by gas passage ports or ducts and employing adequate parameters necessary for maximum combustion of the material to be burned.

(18) "New" shall mean equipment, machines, devices, articles, contrivances or installations built or installed on or after the effective date of these regulations, and installations existing at said stated time which are later altered, repaired or rebuilt and result in the emission of an additional or greater amount of air contaminants. Any equipment moved to another premise involving a change of address, or purchased and to be operated by a new owner, or when a new lessee desires to operate such equipment after the effective date of these regulations shall be considered new.

(19) "Opacity" shall mean a state which renders material partially or wholly impervious to rays of light and causes obstruction of an observer's view.

(20) "Open burning" shall mean the burning of any matter in such a manner that the products of combustion resulting from the burning are emitted directly into the ambient air without passing through an adequate stack, duct or chimney.

(21) "Particulate matter" shall mean any material, except water in uncombined form that is or has been airborne, and exists as a liquid or a solid at standard conditions.

(22) "Person" shall mean any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, political subdivision of this State, and other state or political subdivision or agency thereof and any legal successor, representative agent or agency of the foregoing.

(23) "Pesticide" shall mean, but is not limited to (1) any agent, substance, or mixture of substances intended to prevent, destroy, control, or mitigate any insect, rodent, nematode, predatory animal, snail, slug, bacterium, weed, and any other form of plant or animal life, fungus, or virus, that may infect or be detrimental to persons, vegetation, crops, animals, structures, or households or be present in any environment or which the Department may declare to be a pest, except those bacteria, fungi, protozoa, or viruses on or in living man or other animals; (2) any agent, substance, or mixture of substances intended to be used as a plant regulator, defoliant, or desiccant; and (3) any other similar substance so designated by the Department, including, but not limited to, herbicides, insecticides, fungicides, nematocides, molluscacides, rodenticides, lampreycides, plant regulators, gametocides, post-harvest decay preventatives, and antioxidants.

(24) "Premises" shall mean any property, piece of land or real estate or building.

(25) "Process weight" shall mean the total weight of all materials introduced into any specific process which may cause emissions. Solid fuels charged will be considered as part of the process weight, but liquid and gaseous fuels and combustion air will not.

(26) "Process weight rate" shall mean the rate established as follows:

(a) For continuous or long-run steady-state operations, the total process weight for the entire period of continuous operation or for a typical portion thereof, divided by the number of hours of such period or portion thereof.

(b) For cyclical or batch operations, the total process weight for a period that covers a complete operation or an integral number of cycles, divided by the hours of actual process operation during such a period. Where the nature of any process or operation or the design of any equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

(27) "Public nuisance" shall mean any condition of the ambient air beyond the property line of the offending person which is injurious to health, or offensive to the senses, or which causes or constitutes an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.

(28) "Refuse" shall mean any combustible waste material, trade waste, rubbish, or garbage containing carbon in a free or combined state.

(29) "Rubbish" shall mean non-putrescible solid wastes consisting of both combustible and non-combustible wastes. Combustible rubbish includes paper, rags, cartons, wood, furniture, rubber, plastics, yard trimmings, leaves, and similar materials. Non-combustible rubbish includes glass, crockery, cans, dust, metal furniture and like materials which will not burn at ordinary incinerator temperatures (1,600°F. to 1,800°F.).

(30) "Salvage operation" shall mean any operation conducted in whole or in part for the salvaging or reclaiming of any product or material.

(31) "Smoke" shall mean small gas-borne particles resulting from incomplete combustion, consisting predominantly, but not exclusively, of carbon, ash and other combustible material, that form a visible plume in the air.

(32) "Source" shall mean any property, real or personal, or person contributing to air pollution.

(33) "Source operation" shall mean the last operation preceding emission which operation (a) results in the separation of the air contaminant from the process materials or in the conversion of the process materials into air contaminants, as in the case of combustion fuel; and (b) is not an air pollution abatement operation.

(34) "Stack or chimney" shall mean any flue, conduit or duct arranged to conduct emissions.

(35) "Submerged fill pipe" shall mean any fill pipe the discharge opening of which is entirely submerged when the liquid level is six inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean any fill pipe the discharge opening of which is entirely submerged when the liquid level is 1.5 times the fill pipe diameter in inches above the bottom of the tank.

(36) "Standard conditions" shall mean a dry gas temperature of 60 degrees fahrenheit (15.6 degrees centigrade) and a gas pressure of 14.7 pounds per square inch absolute (760 millimeters of mercury.)

(37) "Trade waste" shall mean solid, liquid, or gaseous waste material resulting from construction or the conduct of any business, trade or industry, or any demolition operation including, but not limited to wood, plastics, cartons, grease, oil, chemicals and cinders.

(38) "Volatile organic compounds" shall mean any compound containing carbon and hydrogen or containing carbon and hydrogen in combination with any other element which has a Modified Reid (77.6 mm Hg.) or greater under actual storage conditions.

(39) "Waste classification" shall mean the seven classifications of waste as defined by the Incinerator Institute of America and American Society of Mechanical Engineers.

### (15.0) 1.050 ENTRY ONTO PREMISES-AUTHORITY

Entry onto premises and on-site inspection shall be made pursuant to Section 23-25-05 of Chapter 23-25 of the North Dakota Century Code.

### (5.0) 1.060 VARIANCES

1.061 Where upon written application of the responsible person or persons the Department finds that by reason of exceptional circumstances strict conformity with any provisions of these regulations would cause undue hardship, would be unreasonable, impractical or not feasible under the circumstances, the Department may permit a variance from these regulations upon such conditions and within such time limitations as it may prescribe for prevention, control or abatement of air pollution in harmony with the intent of the State and any applicable Federal laws.

1.062 No variance may permit or authorize the maintenance of a nuisance, or a danger to public health or safety.

(2.0) 1.070 CIRCUMVENTION

No person shall cause or permit the installation or use of any device of any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which would otherwise violate these regulations.

(2.0) 1.080 SEVERABILITY

If any provision of these regulations or the application thereof to any person or circumstances is held to be invalid, such invalidity shall not affect other provisions or application of any other part of these regulations which can be given effect without the invalid provision or application, and to this end the provisions of these regulations and the various applications thereof are declared to be severable.

(2.0) 1.090 LAND USE PLANS AND ZONING REGULATIONS

1.091 Planning Agency Land-Use Plans

(1) The Department will provide to planning agencies, for use in preparing land-use plans, information concerning:

(a) Air-quality

(b) Air-pollutant emissions

(c) Air pollutant meteorology

(d) Air-quality goals

(e) Air pollution effects

(2) The Department will review all land-use plans and prepare recommendations for consideration in the plan adoption process.

1.092 Zoning Agency Regulations

(1) The Department will provide to zoning control agencies, for use in preparing regulations, information concerning:

(a) Air-quality

(b) Air pollutant emissions

(c) Air pollution meteorology

(d) Air-quality goals

(e) Air pollution effects

(2) The Department will review all zoning regulations and prepare recommendations for consideration in the regulation adoption process.

1.100 (RESERVED)

## (9.0) 1.110 MEASUREMENT OF EMISSIONS OF AIR CONTAMINANTS

### 1.111 Sampling and Testing Methods

All tests shall be made and the results calculated in accordance with test procedures approved by the Department. All tests shall be made under the direction of persons qualified by training and/or experience in the field of air pollution control as approved by the Department.

### 1.112 Responsible Persons to Have Tests Made

The Department may require any person responsible for emission of air contaminants to make or have made tests to determine the emission of air contaminants from any source, whenever the Department has reason to believe that an emission in excess of that allowed by these regulations is occurring. The Department may specify testing methods to be used in accordance with good professional practice. The Department may observe the testing. All tests shall be conducted by reputable, qualified personnel. The Department shall be given a copy of the test results in writing and signed by the person responsible for the tests.

### 1.113 The Department May Make Tests

The Department may conduct tests of emissions of air contaminants from any source. Upon request of the Department the person responsible for the source to be tested shall provide necessary holes in stacks or ducts and such other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.

## (7.0) 1.120 SHUTDOWN AND MALFUNCTION OF AN INSTALLATION-REQUIREMENT FOR NOTIFICATION

1.121 Maintenance Shutdowns

In case of shutdown of air pollution control equipment for necessary scheduled maintenance, the intent to shut-down such equipment shall be reported to the Department at least twenty-four (24) hours prior to the planned shutdown provided that the air contaminating source will be operated while the control equipment is not in service. Such prior notice shall include, but is not limited to the following:

(a) Identification of the specific facility to be taken out of service as well as its location and permit number.

(b) The expected length of time that the air pollution control equipment will be out of service.

(c) The nature and estimated quantity of emissions of air pollutants likely to be emitted during the shutdown period.

(d) Measures such as the use of off-shift labor and equipment that will be taken to minimize the length of the shutdown period.

(e) The reasons that it would be impossible or impractical to shutdown the source operation during the maintenance period.

1.122 Malfunctions

When a malfunction in any installation occurs that can be expected to cause the emission of air contaminants in violation of these regulations or other applicable rules and regulations, the person responsible for such installation shall immediately notify the Department of such malfunction and provide a statement giving all pertinent facts, including the estimated duration of the breakdown. On receipt of this notification, the Department may permit the continuance of the operation for a period not to exceed 10 days provided that written application is made to the Department. Such application shall be made within 24 hours of the malfunction or within such other time period as the Department may specify. In cases of major equipment failure, additional time period may be granted by the Department provided a corrective program has been submitted by the person and approved by the Department. The Department shall be notified when the condition causing the malfunction has been corrected.

## (6.0) 1.130 TIME SCHEDULE FOR COMPLIANCE

Except as otherwise specified, compliance with the provisions of these regulations shall be according to the following time schedule:

### 1.131 New Installations

All new installations shall comply as of going into continuous routine operation for its intended purpose.

### 1.132 Existing Installations

All existing installations not in compliance as of the effective date of these regulations shall be in compliance within one year of the effective date of these regulations unless the owner or person responsible for the operation of the installation shall have submitted to the Department in a form and manner satisfactory to it, a program and schedule for achieving compliance, such program and schedule to contain a date on or before which full compliance will be attained, and such other information as the Department may require. If approved by the Department, such date will be the date on which the person shall comply. The Department may require persons submitting such program to submit subsequent periodic reports on progress in achieving compliance. In no event shall the program and schedule prescribe a compliance date later than three years from the effective date of these regulations.

## (2.0) 1.140 PROHIBITION OF AIR POLLUTION

1.141 No person shall permit or cause air pollution, as defined in Section 1.040(3).

1.142 No person shall permit or cause a public nuisance, as defined in Section 1.040(27).

1.143 No person shall cause or permit the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any person or to the public or which endanger the comfort, repose, health, or safety of any such person or the public or which cause injury or damage to business or property.

1.144 Nothing in any other part of these regulations concerning emission of air contaminants or any other regulation relating to air pollution shall in any manner be construed as authorizing or legalizing the creation or maintenance of air pollution, a public nuisance, or a nuisance as described in 1.143.

## R23-25-02 AMBIENT AIR QUALITY STANDARDS

### (2.0) 2.100 SCOPE

The Ambient Air Quality Standards as presented below pertain to the environmental air of the State of North Dakota.

### (2.0) 2.200 PURPOSE

It is the purpose of these air quality standards to set forth levels of air quality for the maintenance of public health and safety, and to provide guidance to the city, county, and township boards of health in conducting programs to abate air pollution. These Standards set forth a mechanism of achieving cleaner air and are not a permit for the unnecessary degradation of air quality.

### (4.0) 2.300 AIR QUALITY GUIDELINES

In keeping with the purpose of these Ambient Air Quality Standards, the quality should be such that:

(a) The health of even sensitive or susceptible segments of the population will not be adversely affected;

(b) concentrations of pollutants will not cause public nuisance or annoyance;

(c) significant damage to animals, ornamental plants, forest and agricultural crops will not occur;

(d) visibility will not be significantly reduced;

(e) metals or other materials will not be significantly corroded or damaged;

(f) fabrics will not be soiled, deteriorated, or their colors affected; and

(g) natural scenery will not be obscured.

### (4.0) 2.400 AMBIENT AIR QUALITY STANDARDS

#### (50.1) 2.410 Particulates and Gases

The standards of ambient air quality listed in Table 1 define the limits of air contamination by particulates and gases, above which limits the ambient air is hereby declared to be unacceptable and require air pollution control measures. Until additional pertinent information becomes available through surveillance and research with respect to the effects of the air contaminants listed in Table 1, the air quality limits listed in Table 1 shall apply in North Dakota. The limits stated, include normal background levels of particulates and gases.

### (50.7) 2.420 Radioactive Substances

The ambient air shall not contain any radioactive substances exceeding the concentrations specified in Regulation No. 83 of the North Dakota State Department of Health of the title "Radiological Health Regulations".

### (50.7) 2.430 Other Air Contaminants

The ambient air shall not contain air contaminants in concentrations that would be injurious to human health or well-being, or unreasonably interfere with the enjoyment of property or that would injure plant or animal life.

## (9.0) 2.500 METHODS OF SAMPLING AND ANALYSIS

Air contaminants shall be measured by the methods or methods listed in Table 2, or by such other methods approved by the Department. The publications or their replacements listed in Table 2 are made part of these regulations by reference.

The sampling and analytical procedures employed and the numbers, duration, and location of samples to be taken to measure ambient levels of air contaminants shall be consistent with obtaining accurate results which are statistically significant and representative of the conditions being evaluated.

## (4.0) 2.600 REFERENCE CONDITIONS

The standards of ambient air quality listed in Table 1 are corrected to a reference temperature of 25°C. and a reference pressure of 760 millimeters of mercury (1,013.2 millibars).

## (4.0) 2.700 DEGRADATION OF AMBIENT AIR HAVING A HIGHER QUALITY THAN THAT SET FORTH IN 2.400 RESTRICTED

Ambient air whose quality as of the effective date of these regulations is higher than the standards set forth in 2.400 shall be maintained at the higher quality unless it can be affirmatively demonstrated to the Department that a change in quality is justifiable and will not be contrary to the guidelines of 2.300.

## (4.0) 2.800 CONCENTRATIONS OF AIR CONTAMINANTS IN THE AMBIENT AIR RESTRICTED

2.810 No person shall cause or permit the emission of air contaminants from any premises in such manner and amounts that the concentrations and frequencies attributable to such emission exceed those shown in 2.400 in the ambient air at any place beyond the premises on which the source is located.

2.820 Nothing in any other part or section of these regulations shall in any manner be construed as authorizing or legalizing the emission of air contaminants in such manner as prohibited in 2.810.

Table 1. AMBIENT AIR QUALITY STANDARDS

| Air Contaminants | | Standards (Maximum Permissible Concentrations |
|---|---|---|
| **Particulates** | | |
| Total Suspended Particulate | 60 | micrograms per cubic meter of air, maximum annual geometric mean |
| | 150 | micrograms per cubic meter of air, maximum 24-hour concentration not to be exceeded more than once per year |
| Settled Particulate (Dustfall) | 15 | tons per square mile per month, maximum 3-month arithmetic mean in residential areas |
| | 30 | tons per square mile per month, maximum 3-month arithmetic mean in heavy industrial areas |
| Coefficient of Haze | 0.4 | Coh. per 1,000 lineal feet, maximum annual geometric mean |
| **Sulfur Oxides** | | |
| Sulfur Dioxide | 60 | micrograms per cubic meter of air (0.02 p.p.m.), maximum annual arithmetic mean |
| | 260 | micrograms per cubic meter of air (0.10 p.p.m.), maximum 24-hour concentration |
| | 715 | micrograms per cubic meter of air (0.28 p.p.m.), maximum 1-hour concentration |
| Reactive Sulfur (Sulfation) | 0.25 | milligram sulfur trioxide per 100 square centimeters per day, maximum annual arithmetic mean |
| | 0.50 | milligram sulfur trioxide per 100 square centimeters per day, maximum for a 1-month period |
| Suspended Sulfate | 4 | micrograms per cubic meter of air, maximum annual arithmetic mean |
| | 12 | micrograms per cubic meter of air, maximum 24-hour concentration not to be exceeded over 1 percent of the time |

Table 1. AMBIENT AIR QUALITY STANDARDS (Cont.)

| Air Contaminants | | Standards (Maximum Permissible Concentrations |
|---|---|---|
| Sulfuric Acid Mist, Sulfur Trioxide, or any combination thereof | 4 | micrograms per cubic meter of air, maximum annual arithmetic mean |
| | 12 | micrograms per cubic meter of air, maximum 24-hour concentration not to be exceeded over 1 percent of the time |
| | 30 | micrograms per cubic meter of air, maximum 1-hour concentration not to be exceeded over 1 percent of the time |
| Hydrogen Sulfide | 45 | micrograms per cubic meter of air (0.032 p.p.m.), maximum 1/2-hour concentration not to be exceeded more than twice in any 5 consecutive days |
| | 75 | micrograms per cubic meter of air (0.054 p.p.m.), maximum 1/2-hour concentration not to be exceeded over twice a year |
| Carbon Monoxide | 10 | milligrams per cubic meter of air (9 p.p.m.), maximum 8-hour concentration not to be exceeded more than once per year |
| | 40 | milligrams per cubic meter of air (35 p.p.m.), maximum 1-hour concentration not to be exceeded more than once per year |
| Photochemical Oxidants | 160 | micrograms per cubic meter of air (0.08 p.p.m.), maximum 1-hour concentration not to be exceeded more than once per year |
| Hydrocarbons | 160 | micrograms per cubic meter of air (0.24 p.p.m.), maximum 3-hour concentration (6 to 9 a.m.) not to be exceeded more than once per year |
| Nitrogen Dioxide | 100 | micrograms per cubic meter of air (0.05 p.p.m.), maximum annual arithmetic |
| | 200 | micrograms per cubic meter of air (0.1 p.p.m.), maximum 1-hour concentration not to be exceeded over 1 percent of the time in any 3-month period |

Table 2. METHODS OF AIR CONTAMINANT MEASUREMENT

| Air Contaminant | Sampling Method | Sampling Interval* | Analytical Method |
|---|---|---|---|
| Particulates<br>Total Suspended Particulates | High-Volume Sampling | 24 Hours | Gravimetric - Reference Method for the Determination of Suspended Particulates in the Atmosphere (High Volume Method). Code of Federal Regulations, Title 42, Chapter IV, Part 410, National Primary and Secondary Ambient Air Quality Standards, Appendix A, Federal Register Vol. 36, No. 84, April 30, 1971. |
| Settled Particulate (Dustfall) | Dustfall Jar | 1 Month | Gravimetric - ASTM D 1739-62. |
| Coefficient of Haze | Paper Tape Sampling | 1 Hour to 3 Hours | Light Transmittance - ASTM D 1704-61. |
| Sulfur Oxides<br>Sulfur Dioxide | Absorption | Continuous 1-Hr. or 24 Hours | Colorimetric - Reference Method for the Determination of Sulfur Dioxide in the Atmosphere (Pararosaniline Method). Code of Federal Regulations, Title 42, Chapter IV, Part 410, National Primary and Secondary Ambient Air Quality Standards, Appendix B, Federal Register Vol. 36, No. 84, April 30, 1971. |
| Reactive Sulfur (Sulfation) | Lead Peroxide Plate | 1 Month | Turbidimetric, Lead Peroxide Plate - Fuey, N.A.<br>Lead Dioxide Estimation of Sulfur Dioxide Pollution", Journal of the Air Pollution Control Assoc. Vol. 18, pp. 610-611, September 1968. |

Table 2. METHODS OF AIR CONTAMINANT MEASUREMENT (Cont.)

| Air Contaminant | Sampling Method | Sampling Interval* | Analytical Method |
|---|---|---|---|
| Suspended Sulfate | High-Volume Sampling | 24 Hours | Turbidimetric, Barium Sulfate Method - Selected Methods for the Measurement of Air Pollutants. U.S. Public Health Service Publication No. 999-AP-11, May 1965. |
| Sulfuric Acid Mist, Sulfur Trioxide | Filter Paper | 1 Hour or 24 Hours | Titration - Commins. B.T. "Determination of Particulate Acid in Town Air." Analyst, Vol. 88 pp. 364-367, May 1963. |
| Hydrogen Sulfide | (a) Paper Tape Sampling | 1/2 Hour | Light Transmittance, Lead Acetate Impregnated Tape - Sensenbauch, J.D. and Hemeon, W.C.L., "A Low Cost Sampler for Measurement of Low Concentration of Hydrogen Sulfide", Air Repair Vol. 4, No. 1, p. 5-7, May 1954. |
| | (b) Absorption | 1/2 Hour | Colorimetric - Jacobs, Braverman, Hochheiser, "Ultramicrodetermination of Sulfides in Air", Anal. Chem. Vol. 29, p. 1349, 1957. |
| Carbon Monoxide | Absorption of Infrared Radiation | Continuous 1 Hr. or 8 Hours | Non Dispersive Infrared Spectrometry - Reference Method for the Continuous Measurement of Carbon Monoxide in the Atmosphere (Non Dispersive Infrared Spectrometry). Code of Federal Regulations, Title 42, Chapter IV, Part 410. National Primary and Secondary Ambient Air Quality Standards, Appendix C., Federal Register Vol. 36, No. 84, April 30, 1971. |

Table 2. METHODS OF AIR CONTAMINANT MEASUREMENT (Cont.)

| Air Contaminant | Sampling Method | Sampling Interval* | Analytical Method |
|---|---|---|---|
| Photochemical Oxidants | Chemiluminescent | Continuous 1-Hr | Chemiluminescent - Photomultiplier Detector - Reference Method for the Measurement of Photochemical Oxidants Corrected for Interferences Due to Nitrogen Oxide and Sulfur Dioxide. Code of Federal Regulations, Title 42, Chapter IV, Part 410, National Primary and Secondary Ambient Air Quality Standards, Appendix D, Federal Register Vol. 36, No. 84, April 30, 1971. |
| Hydrocarbons | Flame Ionization Detector | Semi-continuous 3 Hours | Flame Ionization - Reference Method for the Determination of Hydrocarbons Corrected for Methane. Code of Federal Regulations, Title 42, Chapter IV, Part 410, National Primary and Secondary Ambient Air Quality Standards, Appendix E, Federal Register Vol. 36, No. 84, April 30, 1971. |
| Nitrogen Dioxide | Absorption | Continuous | Colorimetric - Reference Method for the Determination of Nitrogen Dioxide in the atmosphere (24-hour sampling Method). Code of Federal Regulations, Title 42, Chapter IV, Part 410, National Primary and Secondary Ambient Air Quality Standards, Appendix F, Federal Register Vol. 36, No. 84, April 30, 1971. |

*Normal Sampling Interval. Other Sampling Intervals May be Used if Approved by the Department.

## R23-25-03 RESTRICTION OF EMISSION OF VISIBLE AIR CONTAMINANTS

### (50.1.2) 3.100 RESTRICTIONS APPLICABLE TO EXISTING INSTALLATIONS

No person shall discharge into the ambient air from any single source of emission whatsoever, with the exception of existing incinerators, any air contaminant

3.110 of a shade or density equal to or darker than that designated as No. 2 on the Ringelmann Chart, or equivalent standard approved by the Department; or

3.120 of such opacity as to obscure an observer's view to a degree equal to or greater than that described in 3.110.

### (50.1.2) 3.200 RESTRICTIONS APPLICABLE TO NEW INSTALLATIONS AND ALL INCINERATORS

No person shall discharge into the ambient air from any single source of emission whatsoever any air contaminant

3.210 of a shade or density equal to or darker than that designated as No. 1 on the Ringelmann Chart, or equivalent standard approved by the Department; or

3.220 of such opacity as to obscure an observer's view to a degree equal to or greater than that described in 3.210.

### (2.0) 3.300 EXCEPTIONS

(50.1.2) 3.310 A person may discharge into the ambient air from any single source of emission for a period or periods aggregating not more than four minutes in any 60 minutes air contaminants

3.311 of a shade or density not darker than No. 3 on the Ringelmann Chart, or equivalent standard approved by the Department; or

3.312 of such opacity as to obscure an observer's view to a degree not greater than that described in 3.311.

3.320 The provisions of 3.100 and 3.200 shall not apply in the following circumstances:

3.321 Where the presence of uncombined water is the only reason for failure of an emission to meet the requirements of 3.100 and 3.200.

3.322 When smoke is emitted for the purpose of training or research when approved by the Department, including training schools for fire fighting personnel.

3.323 Where the limits specified in these regulations cannot be met because of operations or processes such as, but not limited to, oil field service and drilling operations, but only so long as it is not technically feasible to meet said specifications.

## (9.0) 3.400 METHOD OF MEASUREMENT

The Ringelmann Chart published and described in the U.S. Bureau of Mines Information Circular 8333 or the U.S. Public Health Service Smoke Inspection Guide as described in the Federal Register, Title 42, Chapter 1, Subchapter F, Part 75, shall be used in grading the shade or opacity of visible air contaminant emissions. The Department may specify other means of measurement which give comparable results or results of greater accuracy. The two publications, or replacements, described in this subsection are hereby made a part of these regulations by reference.

## R23-25-04 OPEN BURNING RESTRICTIONS

### (51.13) 4.100 REFUSE BURNING RESTRICTIONS

No person shall dispose of refuse and other combustible material by open burning, or cause, suffer, allow or permit open burning of refuse and other combustible material and no person shall conduct or cause or permit the conduct of a salvage operation by open burning.

### (51.13) 4.200 PERMISSIBLE OPEN BURNING

The open burning of refuse and other combustible material may be conducted as specified in the subsections set forth below if no public nuisance is or will be created and if the burning is not prohibited by, and is conducted in compliance with, other applicable laws, ordinances and regulations. The authority to conduct open burning under the provisions of this section does not exempt or excuse a person from the consequences, damages, or injuries which may result therefrom.

4.201 Fires purposely set for the instruction and training of public and industrial fire-fighting personnel when authorized by the appropriate governmental entity.

4.202 Fires set for the elimination of a fire hazard which cannot be abated by any other means when authorized by the appropriate governmental entity.

4.203 Fires set for the removal of dangerous or hazardous material where there is no other practical or lawful method of disposal and burning is approved in advance by the Department. Where there is imminent danger to human health or safety and where there is no other practical or lawful method of disposal, burning can be initiated without prior notice to the Department provided notice is furnished as soon as practical.

4.204 Campfires and other fires used solely for recreational purposes, for ceremonial occasions, or for outdoor preparation of food.

4.205 Fires purposely set to forest or rangelands for a specific reason in the management of forests or game in accordance with practices recommended by the North Dakota Game and Fish Department, the North Dakota Department of Agriculture, and the United States Forest Service, and the burning is approved in advance by the Department.

4.206 The burning of trees, brush, grass, wood, and other vegetable matter in the clearing of land, right-of-way maintenance operations, and agricultural crop burning if the following conditions are met:

a. Prevailing winds at the time of the burning must be away from any city;

b. The location of the burning must not be adjacent to an occupied residence other than those located on the property on which the burning is conducted;

c. Care must be used to minimize the amount of dirt on the material being burned;

d. Oils, rubber, and other materials which produce unreasonable amounts of air contaminants may not be burned;

e. The initial burning may begin only between three hours after sunrise and three hours before sunset and additional fuel may not be intentionally added to the fire at times outside the limits stated above;

f. The burning must not be conducted adjacent to any highway or public road so as to create a traffic hazard; and

g. The burning must not be conducted within one mile of any military, commercial, county, municipal, or private airport or landing strip.

4.207 Where no municipal collection and disposal service is available, the burning of refuse and other combustible materials generated in the operation of a domestic household if the following conditions are met:

a. The material to be burned must not be the combined waste from a building designed to accommodate more than three such households;

b. The burning must be conducted on the property on which the waste is generated; and

c. The initial burning may begin only between three hours after sunrise and three hours before sunset and additional fuel may not be intentionally added to the fire at times outside the limits stated above.

4.208 The burning of liquid hydrocarbons which are spilled or lost as a result of pipeline breaks or other accidents involving the transportation of such materials or which are generated as wastes as the result of oil exploration, development, production, refining, or processing operations if the following conditions are met:

a. The material cannot be practicably recovered or otherwise lawfully disposed of in some other manner;

b. The burning must not be conducted within a city or adjacent to an occupied residence or in such proximity thereto that the ambient air of such city or occupied residence may be affected by the air contaminants being emitted;

c. The initial burning may begin only between three hours after sunrise and three hours before sunset and additional fuel may not be intentionally added to the fire at times outside the limits stated above; and

d. The burning must be controlled so that a traffic hazard is not created as the result of the air contaminants being emitted.

e. The burning must be approved in advance by the Department, except as provided in 4.203.

## R23-25-05 EMISSIONS OF PARTICULATE MATTER RESTRICTED

### (50.1.1) 5.100 RESTRICTION OF EMISSION OF PARTICULATE MATTER FROM INDUSTRIAL PROCESSES

### (2.0) 5.110 GENERAL PROVISIONS

5.111 Section 5.100 applies to any operation, process, or activity from which particulate matter is emitted except the burning of fuel for indirect heating in which the products of combustion do not come into direct contact with process materials, the burning of refuse, and the processing of salvable material by burning.

5.112 The process weight rate per hour referred to in this section shall be based upon the normal operation maximum capacity of the equipment and if such normal maximum capacity should be increased by process or equipment changes, the new normal maximum capacity shall be used as the process weight in determining the allowable emissions.

5.113 Emission tests relating to 5.100 shall be made following the standards in ASME "Power Test Code PTC-27" dated 1957 and entitled "Determining Dust Concentration in a Gas Stream" or its replacement or other method as approved by the Department.

### (50.1.1) 5.120 EMISSION LIMITATIONS

No person shall cause, suffer, allow, or permit the emission of particulate matter in any one hour from any source in excess of the amount shown in Table 3 for the process weight allocated to such source.

### (2.0) 5.130 EXCEPTIONS

5.131 Temporary operational breakdowns or cleaning of air pollution equipment for any process are permitted provided the owner or operator immediately advises the Department of the circumstances and outlines an acceptable corrective program and provided such operations do not cause an immediate public health hazard.

5.132 The Department may prescribe air quality control requirements that are more restrictive and more extensive than provided in 5.120 if the particulate matter emitted is a radioactive, toxic, or deleterious substance which may affect human health or well-being or that would cause significant damage to animal or plant life.

5.133 Any existing emission source which has particulate collection equipment with a collection efficiency of 99.7 percent or more by weight shall be considered as meeting the provisions of 5.120. The efficiency of the particulate collection equipment shall be determined as outlined in 5.113 with the process being served by the particulate collection equipment being run at normal operation maximum capacity.

5.134 Any portable emission source, not operated at the same premise for more than six months, shall be considered as meeting the provisions of 5.120 if the following conditions are met:

a. The source must not be located within a city;

b. The source must not be located within one-half mile of any occupied residence, and within one mile of the source there shall be no more than two occupied residences;

c. The source must not be located within one-quarter mile of any highway or public road,

d. The source stack or stacks must be equipped with particulate collection equipment with a collection efficiency of 85 percent or more by weight. The efficiency of the particulate collection equipment shall be determined as in 5.133; and

e. The source must be equipped with a fugitive dust control system that prevents the emission of particulate matter from any point other than through a stack.

Table 3. Maximum Allowable Rates of Emission of Particulate Matter from Industrial Processes

| Process Weight Rate | | Rate of Emission | Process Weight Rate | | Rate of Emission |
|---|---|---|---|---|---|
| Lb/hr | Tons/hr | Lb/hr | Lb/hr | Tons/hr | Lb/hr |
| 100 | 0.05 | 0.551 | 16,000 | 8.00 | 16.5 |
| 200 | 0.10 | 0.877 | 18,000 | 9.00 | 17.9 |
| 400 | 0.20 | 1.40 | 20,000 | 10.00 | 19.2 |
| 600 | 0.30 | 1.83 | 30,000 | 15.00 | 25.2 |
| 800 | 0.40 | 2.22 | 40,000 | 20.00 | 30.5 |
| 1,000 | 0.50 | 2.58 | 50,000 | 25.00 | 35.4 |
| 1,500 | 0.75 | 3.38 | 60,000 | 30.00 | 40.0 |
| 2,000 | 1.00 | 4.10 | 70,000 | 35.00 | 41.3 |
| 2,500 | 1.25 | 4.76 | 80,000 | 40.00 | 42.5 |
| 3,000 | 1.50 | 5.38 | 90,000 | 45.00 | 43.6 |
| 3,500 | 1.75 | 5.96 | 100,000 | 50.00 | 44.6 |
| 4,000 | 2.00 | 6.52 | 120,000 | 60.00 | 46.3 |
| 5,000 | 2.50 | 7.58 | 140,000 | 70.00 | 47.8 |
| 6,000 | 3.00 | 8.56 | 160,000 | 80.00 | 49.0 |
| 7,000 | 3.50 | 9.49 | 200,000 | 100.00 | 51.2 |
| 8,000 | 4.00 | 10.4 | 1,000,000 | 500.00 | 69.0 |
| 9,000 | 4.50 | 11.2 | 2,000,000 | 1,000.00 | 77.6 |
| 10,000 | 5.00 | 12.0 | 6,000,000 | 3,000.00 | 92.7 |
| 12,000 | 6.00 | 13.6 | | | |

Interpolation of the data in this table for process weight rates up to 60,000 lb/hr shall be accomplished by use of the equation

$$E = 4.10\ p^{0.67}$$

and interpolation and extrapolation of the data for process weight rates in excess of 60,000 lb/hr shall be accomplished by use of the equation:

$E = 55.0\ p^{0.11} - 40$, where $E$ = rate of emission in lb/hr and

$P$ = process weight rate in tons/hr.

## (51.5) 5.200 MAXIMUM ALLOWABLE EMISSION OF PARTICULATE MATTER FROM FUEL BURNING EQUIPMENT USED FOR INDIRECT HEATING

### (2.0) 5.210 GENERAL PROVISIONS

5.211 Section 5.200 applies to installations in which fuel is burned for the primary purpose of producing steam; hot water; hot air or other indirect heating of liquids, gases or solids and, in the course of doing so, the products of combustion do not come into direct contact with process materials. Fuels include those such as coal, coke, lignite, coke breeze, fuel oil, and wood but do not include refuse. When any products or by-products of a manufacturing process are burned for the same purpose or in conjunction with any fuel, the same maximum emission limitations shall apply.

5.212 The total heat input of all fuel burning units at the source of emission shall be used for determining the maximum allowable particulate matter which may be emitted.

5.213 The amount of particulate matter emitted shall be measured according to the ASME "Power Test Codes - PTC-27", dated 1957, and entitled, "Determining Dust Concentration in a Gas Stream", or its replacement, or other method as approved by the Department.

5.214 The heat content of coal shall be determined according to ASTM D-271-68, Standard Methods of Laboratory Sampling and Analysis of Coal and Coke or its replacement or other method as approved by the Department.

### (51.5) 5.220 EMISSION LIMITATIONS

5.221 Existing Installations

No person shall cause or permit the emission of particulate matter, caused by combustion of fuel in any existing fuel burning equipment, from any stack or chimney in excess of 0.80 pounds of particulates per million BTU heat input. Provided, however, as technology develops for making new control equipment compatible with present plants they shall comply with limitations on emissions of particulate matter from fuel burning installations as outlined in 5.222, New Installations, when directed by the Department.

5.222 New Installations

No person shall cause or permit the emission of particulate matter, caused by the combustion of fuel in any new fuel burning equipment, from any stack or chimney in excess of the quantity set forth in Table 4.

5.223 Means shall be provided in all newly constructed units and wherever practicable in existing units to allow the periodic measurement of fly ash and other particulate matter.

5.224 No person shall burn or cause or permit the burning of refuse in any installation which was designated for the sole purpose of burning fuel.

Table 4. Maximum Allowable Rates of Emission of Particulate Matter from New Fuel Burning Equipment

| Heat input in millions of British Thermal units per hour | Maximum allowable emission of particulate matter in pounds per hour per million British thermal units of heat input |
|---|---|
| 10 or less | 0.600 |
| 50 | 0.486 |
| 100 | 0.443 |
| 500 | 0.359 |
| 1,000 | 0.328 |
| 2,500 | 0.291 |
| 5,000 | 0.266 |
| 7,500 | 0.252 |
| 10,000 | 0.242 |
| 25,000 | 0.215 |
| 50,000 | 0.197 |
| 100,000 | 0.180 |

Interpolation and extrapolation of the data in this table for heat input rates in excess of 10 million BTU per hour shall be accomplished by use of the equation

$$E = 0.811\ H^{-0.131}$$

where E = maximum allowable emission of particulate matter in pounds per hour per million BTU of heat input and H = heat input in millions of BTU per hour.

## (51.9) 5.300 INCINERATORS

### (2.0) 5.310 GENERAL PROVISIONS

5.311 Section 5.300 shall apply to any incinerator used to dispose of refuse or other wastes by burning and the processing of salvageable material by burning.

5.312 The burning capacity of an incinerator shall be the manufacturer's or designers's guaranteed maximum rate or such other rate as may be determined by the Department in accordance with good engineering practices. In case of conflict, the determination made by the Department shall govern.

5.313 The amount of particulate matter emitted from any incinerator shall be determined according to ASME "Power Test Codes - PTC-27" dated 1957 and entitled "Determining Dust Concentration in a Gas Stream" or its replacement or any other method approved by the Department. The above publication is hereby made a part of these regulations by reference. Emissions shall be measured when the incinerator is operating at its maximum capacity or at any other burning rate during which emission of particulate matter is greater.

### (51.9) 5.320 RESTRICTION OF EMISSIONS OF PARTICULATE MATTER FROM INCINERATORS

5.321 No person shall cause or permit the emission of particulate matter from the stack or chimney of any incinerator in excess of the amount shown in Table 5 for the refuse burning rate allocated to such incinerator.

5.322 All new incinerators and all existing incinerators to be modified to meet the requirements of 5.300 and which are to burn Type 2, 3, 4, 5, and 6 waste as classified by the Incinerator Institute of America must be equipped with auxiliary fuel burners of such capacity and design as to assure a temperature in the secondary combustion chamber of at least 1500° F. for a minimum of 0.3 second retention time.

5.323 No incinerator shall be used for the burning of refuse unless such incinerator is a multiple chamber incinerator. Existing incinerators which are not multiple chamber incinerators may be altered, modified or rebuilt as may be necessary to meet this requirement. The Department may approve any other alteration or modification to an existing incinerator if such be found by it to be equally effective for the purpose of air pollution control as a modification or alteration which would result in a multiple chamber incinerator. All new incinerators shall be multiple chamber incinerators, provided that the Department may approve any other kind of incinerator if it finds in advance of construction or installation that such other kind of incinerator is equally effective for purposes of air pollution control.

Existing incinerators burning Type 2 and Type 3 waste which are not multiple chamber incinerators and do not otherwise meet the requirements of 5.321 shall be modified or rebuilt in compliance with this section within 18 months from the effective date of these regulations. Existing incinerators burning Type 4, 5 or 6 waste require the specific approval of the Department. Incinerators handling any garbage and organic waste must have auxiliary fuel burners that maintain a minimum temperature of 1500° F. for a minimum of 0.3 second retention time.

5.324 No person shall burn or cause or permit the burning of refuse in any installation which was designed for the sole purpose of burning fuel.

## (50.1) 5.400 PREVENTING PARTICULATE MATTER FROM BECOMING AIRBORNE

5.410 No person shall cause or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne in amounts which cause a public nuisance or which cause the Ambient Air Quality Standards to be exceeded. Such reasonable precautions shall include, but not be limited to, the following:

(a) Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land;

(b) Application of asphalt, oil, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which can give rise to airborne dusts;

(c) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting or other similar operations;

(d) Covering, at all times when in motion, open bodied trucks transporting materials likely to give rise to airborne dusts;

(e) Conduct of agricultural practices such as tilling of land, application of fertilizers, etc., in such manner as to prevent dust from becoming airborne;

(f) The paving of roadways and their maintenance in a clean condition; and

(g) The prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

5.420 When particulate matter or fugitive dust escapes from a building or equipment in such a manner and amount as to cause a nuisance or violate any regulations, the Department may order that the building or equipment in which processing, handling, and storage are done be tightly closed and ventilated in such a way that all emissions from the building or equipment are treated to remove or destroy such particulate matter or fugitive dust before emission to the ambient air.

Table 5. Maximum Allowable Rates of Emission of Particulate Matter from Incinerators

| Refuse Burning Rate | Allowable Emission Rate | Refuse Burning Rate | Allowable Emission Rate |
|---|---|---|---|
| lb/hr | lb/hr | lb/hr | lb/hr |
| 10 | 0.0409 | 1,500 | 3.38 |
| 20 | 0.0763 | 2,000 | 4.10 |
| 30 | 0.109 | 2,500 | 4.76 |
| 40 | 0.142 | 3,000 | 5.38 |
| 50 | 0.174 | 3,500 | 5.97 |
| 100 | 0.325 | 4,000 | 6.53 |
| 200 | 0.606 | 5,000 | 7.58 |
| 300 | 0.873 | 6,000 | 8.57 |
| 400 | 1.13 | 7,000 | 9.50 |
| 500 | 1.38 | 8,000 | 10.4 |
| 600 | 1.63 | 9,000 | 11.2 |
| 700 | 1.87 | 10,000 | 12.1 |
| 800 | 2.11 | 25,000 | 22.3 |
| 900 | 2.35 | 50,000 | 35.5 |
| 1000 | 2.58 | 100,000 | 56.4 |

Interpolation of the data in this table for refuse burning rates up to 1,000 lb/hr shall be accomplished by the use of the equation:

$$E = 0.00515 R^{0.90}$$

and interpolation and extrapolation of the data for refuse burning rates in excess of 1,000 lb/hr shall be accomplished by use of the equation:

$$E = 0.0252 R^{0.67}$$

where E = allowable emission rate in lb/hr and R = refuse burning rate in lb/hr.

## R23-25-06 EMISSIONS OF SULFUR COMPOUNDS RESTRICTED

### (51.6) 6.100 RESTRICTION OF EMISSIONS OF SULFUR DIOXIDE FROM USE OF FUEL

#### 6.110 GENERAL PROVISIONS

6.111 Section 6.100 shall apply to any installation in which fuel is burned and in which the sulfur dioxide emission is substantially due to the content of the fuel burned, and in which the fuel is burned primarily to produce heat.

6.112 For purposes of 6.100, a fuel burning installation is any single fuel burning furnace or boiler or other unit, device, or contrivance in which fuel is burned or any grouping of two or more such furnaces or boilers or other units, devices, or contrivances on the same premises or otherwise located in close proximity to each other and under control of the same person. The capacity of such installations shall be the manufacturer's or designer's guaranteed maximum heat input rate.

#### 6.120 RESTRICTIONS APPLICABLE TO FUEL BURNING INSTALLATIONS

No person shall cause or permit the emission of sulfur dioxide to the ambient air from any fuel burning installation in an amount greater than 3.0 pounds of sulfur dioxide per million BTU's of heat input to the installation.

### (51.6) 6.200 RESTRICTION OF EMISSIONS OF SULFUR OXIDES FROM INDUSTRIAL PROCESSES

#### 6.210 GENERAL PROVISIONS

Section 6.200 shall apply to all emissions except those in which both

a. fuel is burned primarily to produce heat, and

b. the sulfur compound emission is due primarily to the sulfur in the fuel burned.

#### 6.220 CONCENTRATION OF SULFUR COMPOUNDS IN EMISSIONS RESTRICTED

The Department may establish emission limitations on the amount of sulfur dioxide, sulfur trioxide, and sulfuric acid which may be emitted into the ambient air from any source specified in 6.210 in any area, if it is determined that such source is causing the Ambient Air Quality Standards to be exceeded.

## (9.0) 6.300 METHODS OF MEASUREMENT

### 6.310 SULFUR OXIDES

The method of measuring sulfur oxides in stack gases shall be the Shell Development Company method as published in "Atmospheric Emissions from Sulfuric Acid Manufacturing Processes." Public Health Service Publication 999-AP-13 (1965), Appendix B, pp. 85-87. This publication or its replacement is made part of these regulations by reference.

### 6.320 SULFUR TRIOXIDE AND SULFURIC ACID

The method of measuring sulfur trioxide, sulfuric acid, or any combination thereof in stack gases shall be the modified Monsanto Company method as published in "Atmospheric Emissions from Sulfuric Acid Manufacturing Processes", Public Health Service Publication 999-AP-13 (1965), Appendix B, pp. 61-66. This publication or its replacement is made part of these regulations by reference.

### 6.330 OTHER TEST METHODS MAY BE USED

Other test methods approved by the Department may be used.

## R23-25-07 CONTROL OF ORGANIC COMPOUNDS EMISSIONS

## (51.16) 7.100 REQUIREMENTS FOR CONSTRUCTION OF ORGANIC COMPOUNDS FACILITIES

### 7.110 SCOPE

Section 7.100 shall apply only to those facilities considered "new" as defined in R23-25-01, Section 1.040(18) of these regulations.

### 7.120 VOLATILE ORGANIC COMPOUNDS STORAGE TANKS

No person shall build or install or permit the building or installation of any stationary tank, reservoir or other container of more than 65,000 gallons capacity which will or might be used for storage of any volatile organic compounds unless such tank, reservoir or other container is to be a pressure tank capable of maintaining working pressures sufficient at all times to prevent vapor or gas loss to the ambient air or is designed, and will be built, and equipped with one of the following vapor loss control devices:

7.121 A floating roof, consisting of a pontoon type, double deck type roof, or internal floating cover, which will rest on the surface of the liquid contents and be equipped with a closure seal or seals, to close the space between the roof edge and tank wall or an internal floating cover or other device equally effective. The control equipment to be provided for in 7.120 shall not be permitted if the volatile organic compounds to be stored will have a vapor pressure of 12.0 pounds per square inch absolute or greater under actual storage conditions. All tank gauging and sampling devices shall be built so as to be gas-tight except when gauging or sampling is to take place.

7.122 A vapor recovery system consisting of a vapor-gathering system capable of collecting the volatile organic compound vapors and gases discharged and a vapor disposal system capable of processing such vapors and gases so as to prevent their emission to the ambient air and with all tank gauging and sampling devices gas-tight except when gauging or sampling is taking place.

7.123 Other equipment or means of equal efficiency for purposes of air pollution control as may be approved by the Department.

7.130 SUBMERGED FILL PIPES REQUIRED

No person shall build or install or permit the building or installation of a stationary volatile organic compounds storage tank with a capacity of 1,000 gallons or more unless such tank is equipped with a submerged fill pipe during loading operations or is a pressure tank as described in 7.120 or is fitted with a vapor recovery system as described in 7.122.

7.140 VOLATILE ORGANIC COMPOUNDS LOADING FACILITIES

No person shall build or install or permit the building or installation of volatile organic compounds tank car or tank truck loading facilities handling 20,000 gallons per day or more unless such facilities are equipped with submersible filling arms or other vapor emission control systems.

7.150 PUMPS AND COMPRESSORS

All rotating pumps and compressors handling volatile organic compounds shall be equipped with mechanical seals or other equipment of equal efficiency for purposes of air pollution control as may be approved by the Department.

(51.16) 7.200 REQUIREMENTS FOR ORGANIC COMPOUNDS GAS DISPOSAL

7.210 No person shall cause or permit the emission of organic compounds gases and vapors, except from a vapor blowdown system or emergency relief system, unless these gases and vapors are burned by smokeless flares, or an equally effective control device as approved by the Department.

7.220 Organic compounds gases and vapors which are generated as wastes as the result of oil exploration, development, production, refining, or processing operations and which contain hydrogen sulfide, shall be incinerated, flared or treated in an equally effective manner before being released to the ambient air. The emissions from all devices designed for incinerating, flaring or treating waste organic compounds gases and vapors shall result in compliance with the ambient air quality standards.

## R23-25-08 CONTROL OF AIR POLLUTION FROM VEHICLES AND OTHER INTERNAL COMBUSTION ENGINES

### (12.0) 8.100 INTERNAL COMBUSTION ENGINE EMISSIONS RESTRICTED

No person shall operate, or cause to be operated, any internal combustion engine which emits from any source any unreasonable and excessive smoke, obnoxious or noxious gases, fumes, or vapor.

### (12.0) 8.200 REMOVAL AND/OR DISABLING OF MOTOR VEHICLE POLLUTION CONTROL DEVICES PROHIBITED

8.210 No person shall intentionally remove, alter, or otherwise render inoperative, exhaust emission control, crankcase ventilation, or any other air pollution control device which has been installed as a requirement of Federal law or regulation.

8.220 No person shall operate a motor vehicle originally equipped with air pollution control devices as required by Federal law or regulation unless such devices are in place and in operating condition.

## R23-25-09 EMISSION OF CERTAIN SETTLEABLE ACIDS AND ALKALINE SUBSTANCES RESTRICTED

### (2.0) 9.100 GENERAL PROVISIONS

R23-25-09 shall apply to all emissions from any source or any premises.

### (51.21) 9.200 EMISSIONS RESTRICTED

No person shall cause or permit the emission from any source or premises of substances having acidic or alkaline properties in such manner and amounts that the downwind fallout rate of acidic or alkaline substances, at any place where an adverse effect could occur, exceeds the upwind fallout rate by five or more spots per hour, as measured in the manner prescribed in 9.300.

### (9.0) 9.300 METHOD OF MEASUREMENT

9.310 The fallout sampling devices used in determining compliance with R23-25-09 shall consist of circular glass dishes 15 centimeters in diameter. The dishes shall be supported on a nearly horizontal surface not larger than the dish. The dish bottom shall be at least 3 feet above the earth or other surface on which its support is resting. The dish shall be coated with a solution of thymol blue, ammonia water solution and gelatin dried to a yellow color in a vacuum oven at room temperature. Prepared dishes shall be stored in a desiccator at 40 percent relative humidity, or in plastic bags.

9.320 Fallout sampling devices shall be put in place at one or more locations upwind and downwind of a premises at locations beyond the premises on which a source or sources are located. The devices shall be left exposed to substances settling out of the ambient air for a period of 1-hour. The presence of red-colored spots visible to the naked eye on the samplers used to measure fallout of acidic substances shall be constructed to mean that acidic substances have settled out of the air. The presence of blue colored spots visible to the naked eye on the samplers used to measure fallout of alkaline substances shall be construed to mean that alkaline substances have settled out of the air. The number of spots visible on samplers exposed upwind of a premises is to be subtracted from the number of spots visible on samplers exposed downwind of the same premises. The difference in the number of spots, if any, shall be construed to be attributable to emissions occuring on the premises under investigation.

9.330 In lieu of the test methods specified in 9.310 and 9.320 any other method approved by the Department may be used.

## R23-25-10 CONTROL OF PESTICIDES

## (51.21) 10.100 PESTICIDE USE RESTRICTED

10.110 No person shall use or permit the use of pesticides in such manner that will cause the airborne drift of pesticides off the premises on which they are being applied in such quantities that cause damage or injury to human health, crops, domestic animals, pollinating insects, vegetation, fish, and wildlife.

10.120 No person shall aerial spray or permit the aerial spraying of pesticides over a city in the State without the approval of the Department. Such spraying will be allowed only for well thought out public health purposes and even then only in emergencies.

## (51.21) 10.200 RESTRICTIONS ON THE DISPOSAL OF SURPLUS PESTICIDES AND EMPTY PESTICIDE CONTAINERS

10.210 No person shall dispose of or permit the disposal of surplus pesticides and empty pesticide containers in such a manner as may cause pesticides to become airborne in such quantities that may cause injury or damage to human health, crops, domestic animals, pollinating insects, vegetation, fish, and wildlife.

10.220 No person shall dispose of or permit the disposal of surplus pesticides and empty pesticide containers by open burning.

## R23-25-11 PREVENTION OF AIR POLLUTION EMERGENCY EPISODES

### (8.0) 11.100 AIR POLLUTION EMERGENCY

R23-25-11 is designed to prevent the excessive buildup of air contaminants during air pollution episodes, thereby preventing the occurrence of an emergency due to the effects of these air contaminants on human health.

### (8.0) 11.200 AIR POLLUTION EPISODE CRITERIA

Conditions justifying the proclamation of an Air Pollution Alert, Air Pollution Warning, or Air Pollution Emergency shall be deemed to exist whenever the Department determines that the accumulation of air contaminants in any place within the State of North Dakota is attaining or has attained levels which could, if such levels are sustained or exceeded, lead to a substantial threat to human health. In making this determination, the Department will be guided by the criteria listed in Table 6.

### (8.0) 11.300 ABATEMENT STRATEGIES EMISSION REDUCTION PLANS

11.310 When the Department declares an Air Pollution Alert, Air Pollution Warning, or Air Pollution Emergency, any person responsible for the operation of a source of air contaminants as set forth in Table 7 shall take all actions as required by Table 7 for such source of air contaminants for the level declared and shall put into effect the preplanned abatement strategies plan for the level declared.

11.320 When the Department determines that a specified criteria level has been reached at one or more monitoring sites solely because of emissions from a limited number of sources. the Department shall notify such source(s) that the actions set forth in Table 7 or the preplanned abatement strategies plans are required, insofar as it applies to such source(s) and shall be put into effect until the criteria of the specified level are no longer met.

### (8.0) 11.400 PREPLANNED ABATEMENT STRATEGIES PLANS

11.410 Any person responsible for the operation of a source of air contaminants as set forth in Table 7 shall prepare abatement strategies plans for reducing the emission of air contaminants during periods of an Air Pollution Alert, Air Pollution Warning, and Air Pollution Emergency. Abatement strategies plans shall be designed to reduce or eliminate emissions of air contaminants in accordance with the objectives set forth in Table 7.

11.420 Any person responsible for the operation of a source of air contaminants not set forth under Section 11.410 shall, when requested by the Department, in writing, prepare abatement strategies plans for reducing the emission of air contaminants during periods of an Air Pollution Alert, Air Pollution Warning, and Air Pollution Emergency. Abatement strategies plans shall be designed to reduce or eliminate emissions of air contaminants in accordance with the objective set forth in Table 7.

11.430 Abatement strategies plans as required under Sections 11.410 and 11.420 shall be in writing and identify the sources of air contaminants, the approximate amount of reduction of air contaminants and a brief description of the manner in which the reduction will be achieved during an Air Pollution Alert, Air Pollution Warning, and Air Pollution Emergency.

11.440 During a condition of Air Pollution Alert, Air Pollution Warning, and Air Pollution Emergency, abatement strategies plans as required by Sections 11.410 and 11.420 shall be made available on the premises to any person authorized to enforce the provisions of applicable rules and regulations.

11.450 Abatement strategies plans as required by Sections 11.410 and 11.420 shall be submitted to the Department upon request within thirty (30) days of the receipt of such request; such abatement strategies plans shall be subject to review and approval by the Department. If, in the opinion of the Department an abatement strategies plan does not effectively carry out the objectives as set forth in Table 7, the Department may disapprove it, state the reasons for disapproval and order the preparation of an amended abatement strategies plan within the time period specified in the order.

## Table 6. Air Pollution Episode Criteria

1. Air Pollution Forecast:

An internal watch by the Department shall be actuated by a National Weather Service advisory that Atmospheric Stagnation Advisory is in effect or the equivalent local forecast of stagnant atmospheric condition.

2. Air Pollution Alert:

The Alert level is that concentration of contaminants at which first stage control actions is to begin. An Alert will be declared when any one of the following levels is reached at any monitoring site:

$SO_2$-800 ug./$m^3$ (0.3 p.p.m.), 24-hour average.
Particulate-3.0 COHs or 375 ug./$m^3$, 24-hour average.
$SO_2$ and particulate combined-product of $SO_2$ p.p.m., 24-hour average, and COHs equal to 0.2 or product of $SO_2$- ug./$m^3$, 24-hour average, and particulate ug./$m^3$, 24-hour average equal to $65 \times 10^3$.
CO-17 mg./$m^3$ (15 p.p.m.), 8-hour average.
Oxidant ($O_3$)-200 ug./$m^3$ (0.1 p.p.m.) - 1-hour average.
$NO_2$-1,130 ug./$m^3$ (0.6 p.p.m.), 1-hour average, 282 ug./$m^3$ (0.15 p.p.m.), 24-hour average.

and meteorological conditions are such the pollutant concentrations can be expected to remain at the above levels for twelve (12) or more hours or increase unless control actions are taken.

3. Air Pollution Warning:

The warning level indicates that air quality is continuing to degrade and that additional control actions are necessary. A warning will be declared when any one of the following levels is reached at any monitoring site:

$SO_2$-1,600 ug./$m^3$ (0.6 p.p.m.), 24-hour average.
Particulate-5.0 COHs or 625 ug./$m^3$, 24-hour average.
$SO_2$ and particulate combined-product of $SO_2$, p.p.m., 24-hour average and COHs equal to 0.8 or product of $SO_2$ ug./$m^3$, 24-hour average and particulate ug./$m^3$, 24-hour average equal to $261 \times 10^3$.
CO-34 mg./$m^3$ (30 p.p.m.), 8-hour average.
Oxidant ($O_3$)-800 ug./$m^3$ (0.4 p.p.m.), 1-hour average.
$NO_2$ ,260 ug./$m^3$ (1.2 p.p.m.), 1-hr average; 565 ug./$m^3$ (0.3 p.p.m.), 24-hour average.

and meteorological conditions are such that pollutant considerations can be expected to remain at the above levels for twelve (12) or more hours or increase unless control actions are taken.

4. Air Pollution Emergency:

The emergency level indicates that air quality is continuing to degrade toward a level of significant harm to the health of persons and that the most stringent control actions are necessary. An emergency will be declared when any one of the following levels is reached at any monitoring site:

$SO_2$-2,100 ug./$m^3$ (0.8 p.p.m.), 24-hour average.
Particulate-7.0 COHs or 875 ug./$m^3$, 24-hour average.
$SO_2$ and particulate combined-product of $SO_2$ p.p.m., 24-hour average and COHs equal to 1.2 or product of $SO_2$ ug./$m^3$, 24-hour average and particulate ug./$m^3$, 24-hour average equal to $393 \times 10^3$.
CO-46 mg./$m^3$ (40 p.p.m.), 8-hour average.
Oxidant ($O_3$)-1,200 ug./$m^3$ (0.6 p.p.m.), 1-hour average.
$NO_2$-3,000 ug./$m^3$ (1.6 p.p.m.), 1-hour average; 750 ug./$m^3$ (0.4 p.p.m.), 24-hour average.

and meteorological conditions are such that this condition can be expected to continue for twelve (12) or more hours.

5. Termination:

Once declared, any status reached by application of these criteria will remain in effect until the criteria for that level are no longer met. At such time, the next lower status will be assumed.

## Table 7. Abatement Strategies Emission Reduction Plans

### Air Pollution Alert Level

### Part A. General

1. There shall be no open burning by any persons of tree waste, vegetation, refuse, or debris in any form.

2. The use of incinerators for the disposal of any form of solid waste shall be limited to the hours between 12 p.m. and 4 p.m.

3. Persons operating fuel-burning equipment which requires boiler lancing or soot blowing shall perform such operations only between the hours of 12 p.m. and 4 p.m.

4. Persons operating motor vehicles should eliminate all unnecessary operations.

### Part B. Source Curtailment

Any person responsible for the operation of a source of air contaminants listed below shall take all required control actions for this Alert Level.

| Source of Air Contaminants | Control Action |
|---|---|
| 1. Coal or oil-fired electric power generating facilities. | a. Substantial reduction by utilization of fuels having low ash and sulfur content. |
| | b. Maximum utilization of mid-day (12 m. to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing. |
| | c. Substantial reduction by diverting electric power generation to facilities outside of Alert Area. |
| 2. Coal and oil-fired process steam generating facilities. | a. Substantial reduction by utilization of fuels having low ash and sulfur content. |
| | b. Maximum utilization of mid-day (12 m. to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing. |

| Source of Air Contaminants | Control Action |
|---|---|
| | c. Substantial reduction of steam load demands consistent with continuing plant operations. |
| 3. Manufacturing industries of the following classifications:<br>Primary Metals Industry.<br>Petroleum Refining Operations.<br>Chemical Industries.<br>Mineral Processing Industries<br>Grain Industries. | a. Substantial reduction of air contaminants from manufacturing operations by curtailing, postponing, or deferring production and all operations. |
| | b. Maximum reduction by deferring trade waste disposal operations which emit solid particles, gas vapors or malodorous substances. |
| | c. Maximum reduction of heat load demands for processing. |
| | d. Maximum utilization of mid-day (12 m. to 4 p.m.) atmospheric turbulence for boiler lancing or soot blowing. |

## Air Pollution Warning Level

### Part A. General

1. There shall be no open burning by any persons of tree waste, vegetation, refuse, or debris in any form.

2. The use of incinerators for the disposal of any form of solid waste or liquid waste shall be prohibited.

3. Persons operating fuel-burning equipment which requires boiler lancing or soot blowing shall perform such operations only between the hours of 12 m. and 4 p.m.

4. Persons operating motor vehicles must reduce operations by the use of car pools and increased use of public transportation and elimination of unnecessary operation.

### Part B. Source Curtailment

Any person responsible for the operation of a source of air contaminants listed below shall take all required control actions for this Warning Level.

| Source of Air Contaminants | Control Action |
|---|---|
| 1. Coal or oil-fired electric power generating facilities. | a. Maximum reduction by utilization of fuels having lowest ash and sulfur content. |
| | b. Maximum utilization of mid-day (12 m. to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing. |
| | c. Maximum reduction by diverting electric power generation to facilities outside of Warning Area. |
| 2. Oil and oil-fired process steam generating facilities. | a. Maximum reduction by utilization of fuels having the lowest available ash and sulfur content. |
| | b. Maximum utilization of mid-day (12 m. to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing. |
| | c. Making ready for use a plan of action to be taken if an emergency develops. |

| Source of Air Contaminants | Control Action |
|---|---|
| 3. Manufacturing industries which require considerable lead time for shut-down including the following classifications:<br>Petroleum Refining.<br>Chemical Industries.<br>Primary Metals Industries. | a. Maximum reduction of air contaminants from manufacturing operations by, if necessary, assuming reasonable economic hardships by postponing production and allied operation. |
| | b. Maximum reduction by deferring trade waste disposal operations which emit solid particles, gases, vapors, or malodorous substances. |
| | c. Maximum reduction of heat load demands for processing. |
| | d. Maximum utilization of mid-day (12 m. to 4 p.m.) atmospheric turbulence for boiler lancing or soot blowing. |
| 4. Manufacturing industries which require relatively short lead times for shut-down including the following classifications:<br>Primary Metals Industries.<br>Chemical Industries.<br>Grain Industry.<br>Mineral Processing Industries. | a. Elimination of air contaminants from manufacturing operations by ceasing, curtailing, postponing or deferring to the extent possible without causing injury to persons or damage to equipment. |
| | b. Elimination of air contaminants from trade waste disposal processes which emit solid particles, gases, vapors or malodorous substances. |
| | c. Maximum reduction of heat load demands for processing. |
| | d. Maximum utilization of mid-day (12 m. to 4 p.m.) atmospheric turbulence for boiler lancing or soot blowing. |

## Air Pollution Emergency Level

### Part A. General

1. There shall be no open burning by any persons of tree waste, vegetation, refuse, or debris in any form.

2. The use of incinerators for the disposal of any form of solid or liquid waste shall be prohibited.

3. All places of employment described below shall immediately cease operations:

    a. Mining and quarrying of nonmetallic minerals.

    b. All construction work except that which must proceed to avoid emergent physical harm.

    c. All manufacturing establishments except those required to have in force an air pollution emergency abatement strategies plan.

    d. All wholesale trade establishments; i.e., places of business primarily engaged in selling merchandise to retailers, or industrial, commercial, institutional or professional users, or to other wholesalers, or acting as agents in buying merchandise for or selling merchandise to such persons or companies, except those engaged in the distribution of drugs, surgical supplies and food.

    e. All offices of local, county and State government including authorities, joint meetings, and other public bodies excepting such agencies which are determined by the chief administrative officer of local, county, or State government, authorities, joint meetings and other public bodies to be vital for public safety and welfare and the enforcement of the provisions of this order.

    f. All retail trade establishments except pharmacies, surgical supply distributors, and stores primarily engaged in the sale of food.

    g. Banks, credit agencies other than banks, securities and commodities brokers, dealers, exchanges and services; offices of insurance carriers, agents and brokers, real estate offices.

    h. Wholesale and retail laundries, laundry services and cleaning and dyeing establishments; photographic studios; beauty shops, barber shops, shoe repair shops.

    i. Advertising offices; consumer credit reporting, adjustment and collection agencies; duplicating, addressing, blueprinting, photocopying, mailing, mailing list and stenographic services; equipment rental services, commercial testing laboratories.

- j. Automobile repair, automobile services, garages.
- k. Establishments rendering amusement and recreational services including motion picture theaters.
- l. Elementary and secondary schools, colleges, universities, professional schools, junior colleges, vocational schools, and public and private libraries.

4. All commercial and manufacturing establishments not included in this order will institute such actions as will result in maximum reduction of air contaminants from their operation by ceasing, curtailing, or postponing operations which emit air contaminants to the extent possible without causing injury to persons or damage to equipment.

5. The use of motor vehicles is prohibited except in emergencies with the approval of local police or State Highway Patrol.

## Part B. Source Curtailment

Any person responsible for the operation of a source of air contaminants listed below shall take all required control actions for this Emergency Level.

| Source of Air Contaminants | Control Action |
|---|---|
| 1. Coal or oil-fired electric power generating facilities. | a. Maximum reduction by utilization of fuels having lowest ash and sulfur content. |
| | b. Maximum utilization of mid-day (12 m. to 4 p.m.) atmospheric turbulence for boiler lancing or soot blowing. |
| | c. Maximum reduction by diverting electric power generation to facilities outside of Emergency Area. |
| 2. Coal and oil-fired process steam generating facilities. | a. Maximum reduction by reducing heat and steam demands to absolute necessities consistent with preventing equipment damage. |
| | b. Maximum utilization of mid-day (12 m. to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing. |
| | c. Taking the action called for in the Abatement Strategies Plan for the Emergency Level. |

| Source of Air Contaminants | Control Action |
|---|---|
| 3. Manufacturing industries of the following classifications:<br>Primary Metals Industries.<br>Petroleum Refining.<br>Chemical Industries.<br>Mineral Processing Industries<br>Grain Industry. | a. Elimination of air contaminants from manufacturing operations by ceasing, curtailing, postponing or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment. |
| | b. Elimination of air contaminants from trade waste disposal processes which emit solid particles, gases, vapors, or malodorous substances. |
| | c. Maximum reduction of heat load demands for processing. |
| | d. Maximum utilization of mid-day (12 m. to 4 p.m.) atmospheric turbulence for boiler lancing or soot blowing. |

## R23-25-12 STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

### (2.0) 12.100 GENERAL PROVISIONS

### (2.0) 12.101 Applicability

The provisions of this regulation apply to the owner or operator of any stationary source which contains an affected facility the construction or modification of which is commenced after the effective date of this regulation. These standards shall be applied in conjunction with the procedure set out in R23-25-14.

### (1.0) 12.102 Definitions

As used in this regulation, all terms not defined herein shall have the meaning given them in the Act or Section 1.040 of these regulations.

(1) "Standard" means a standard of performance promulgated under this regulation.

(2) "Stationary source" means any building, structure, facility, or installation which emits or may emit any air pollutant.

(3) "Affected facility" means, with reference to a stationary source, any apparatus to which a standard is applicable.

(4) "Owner or operator" means any person who owns, leases, operates, controls, or supervises an affected facility or a stationary source of which an affected facility is a part.

(5) "Construction" means fabrication, erection, or installation of an affected facility.

(6) "Modification" means any physical change in, or change in the method of operation of, an affected facility which increases the amount of any air pollutant (to which a standard applies) emitted by such facility or which results in the emission of any air pollutant (to which a standard applies) not previously emitted, except that:

   (a) Routine maintenance, repair, and replacement shall not be considered physical changes, and

   (b) The following shall not be considered a change in the method of operations:

(i) An increase in the production rate, if such increase does not exceed the operating design capacity of the affected facility:

(ii) An increase in hours of operation;

(7) "Commenced" means, with respect to the definition of "new source" that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

(8) "Opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

(9) "Nitrogen oxides" means all oxides of nitrogen except nitrous oxide, as measured by test methods set forth in this regulation.

(10) "Standard conditions" means a temperature of 20°C (68°F) and a pressure of 760 mm of Hg (29.92 in. of Hg).

(11) "Proportional sampling" means sampling at a rate that produces a constant ratio of sampling rate to stack gas flow rate.

(12) "Isokinetic sampling" means sampling in which the linear velocity of the gas entering the sampling nozzle is equal to that of the undisturbed gas stream at the sample point.

(13) "Startup" means the setting in operation of an affected facility for any purpose.

(14) "Shutdown" means the cessation of operation of an affected facility for any purpose.

(15) "Malfunction" means any sudden and unavoidable failure of air pollution control equipment or process equipment or a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable equipment breakdown shall not be considered malfunctions.

(16) "One-hour period" means any 60 minute period commencing on the hour.

(17) "Reference method" means any method of sampling and analyzing for an air pollutant as described in Appendix A to this regulation.

(18) "Equivalent method" means any method of sampling and analyzing for an air pollutant which has been demonstrated to the Department's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

(19) "Alternative method" means any method of sampling and analyzing for an air pollutant which is not a reference or equivalent method but which has been demonstrated to the Department's satisfaction to, in specific cases, produce results adequate for the Department's determination of compliance.

(20) "Particulate matter" means any finely divided solid or liquid material, other than uncombined water, as measured by Method 5 of Appendix A to this regulation or an equivalent or alternative method.

(21) "Run" means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

(22) "Six-minute period" means any one of the 10 equal parts of a one-hour period.

(23) "Continuous monitoring system" means the total equipment, required under the emission monitoring divisions in applicable subsections, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

(24) "Monitoring device" means the total equipment, required under the monitoring of operations divisions in applicable subsections, used to measure and record (if applicable) process parameters.

## (2.0) 12.103 Abbreviations

The abbreviations used in this part have the following meanings:

A.S.T.M.-American Society for Testing and Materials
Btu-British thermal unit
°C-degree Celsius (centigrade)
cal-calorie
CdS-cadmium sulfide
cfm-cubic feet per minute
CO-carbon monoxide
$CO_2$-carbon dioxide
dscm-dry cubic meter(s) at standard conditions
dscf-dry cubic feet at standard conditions
eq-equivalents
°F-degree Fahrenheit
g-gram(s)
gal-gallon(s)
g-eq-gram equivalents
gr-grain(s)
hr-hour(s)
HCl-hydrochloric acid
Hg-mercury
$H_2O$-water
$H_2S$-hydrogen sulfide
$H_2SO_4$-sulfuric acid
in.-inch(es)
°K-degree Kelvin
k-1,000
kg-kilogram(s)
l-liter(s)
lpm-liter(s) per minute
lb-pound(s)
m-meter(s)
meq-milliequivalent(s)
min-minute(s)
mg-milligram(s)
ml-milliliter(s)
mm-millimeter(s)
mol.wt.-molecular weight
mV-millivolt
$N_2$-nitrogen
nm-nanometer(s)-$10^{-9}$ meter
NO-nitric oxide
$NO_2$-nitrogen dioxide
$NO_x$-nitrogen oxides
$O_2$-oxygen
ppb-parts per billion
ppm-parts per million
psia-pounds per square inch absolute
°R-degree Rankine
s-at standard conditions
sec-second
$SO_2$-sulfur dioxide
$SO_3$-sulfur trioxide
ug-microgram(s)-$10^{-6}$ gram

## (2.0) 12.104 Determination of Construction or Modification

When requested to do so by an owner or operator, the Department will make a determination of whether actions taken or intended to be taken by such owner or operator constitute construction or modification or the commencement thereof within the meaning of this section.

(2.0) 12.105 Review of Plans

(1) When requested to do so by an owner or operator, the Department will review plans for construction or modification for the purpose of providing technical advice to the owner or operator.

(2) (a) A separate request shall be submitted for each construction or modification project.

(b) Each request shall identify the location of such project, and be accompanied by technical information describing the proposed nature, size, design, and method of operation of each affected facility involved in such project, including information on any equipment to be used for measurement or control of emissions.

(3) Nothing in this subsection or subsection 12.104 nor any action taken by the Department pursuant to this subsection or subsection 12.104 shall;

(a) Prevent the Department from making any such determination described above upon its own initiative;

(b) Prevent the Department from making any subsequent redetermination;

(c) Relieve an owner or operator of legal responsibility for compliance with any provision of this regulation or of any applicable Federal or local requirement, or

(d) Prevent the Department from implementing or enforcing any provision of this regulation or taking any other action authorized by law.

(13.0) 12.106 Notification and Record Keeping

(1) Any owner or operator subject to the provisions of this regulation shall furnish the Department written notification as follows:

(a) A notification of the anticipated date of initial startup of an affected facility not more than 60 days or less than 30 days prior to such date.

(b) A notification of the actual date of initial startup of an affected facility within 15 days after such date.

(c) A notification of the date upon which demonstration of the continuous monitoring system performance commences in accordance with subsection 12.111(3). Notification shall be postmarked not less than 30 days prior to such date.

(2) Any owner or operator subject to the provisions of this regulation shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

(3) Each owner or operator required to install a continuous monitoring system shall submit a written report of excess emissions (as defined in applicable subsections) to the Department for every calendar quarter. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter and shall include the following information:

(a) The magnitude of excess emissions computed in accordance with subsection 12.111(8), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions.

(b) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(c) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

(d) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(4) Any owner or operator subject to the provisions of this regulation shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this regulation recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records.

### (9.0) 12.107 Performance Tests

(1) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, and at such other times as may be required by the Department, the owner or operator of such facility shall conduct performance test(s) and furnish the Department a written report of the results of such performance test(s). The period during which performance tests are conducted shall be a period of trial operation pursuant to a permit to construct, and shall not be construed as allowing regular, commercial operation of the permitted facility.

(2) Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable subsection of section 12.400, unless the Department; (a) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, or (b) approves the use of an equivalent method, or (c) approves the use of an alternative method the results of which it has determined to be adequate for indicating whether a specific source is in compliance, or (d) waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Department's satisfaction that the affected facility is in compliance with the standard.

(3) Performance tests shall be conducted under such conditions as the Department shall specifiy to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Department such records as may be necessary to determine the conditions for the performance tests. Operations during periods of startup, shutdown, and malfunction shall

not constitute representative conditions or performance tests unless otherwise specified in the applicable standard.

(4) The owner or operator of an affected facility shall provide the Department 30 days prior notice of the performance test to afford the Department the opportunity to have an observer present.

(5) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

  (a) Sampling ports adequate for test methods applicable to such facility.

  (b) Safe sampling platform(s).

  (c) Safe access to sampling platform(s).

  (d) Utilities for sampling and testing equipment.

(6) Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the Department's approval, be determined using the arithmetic mean of the results of the two other runs or, the Department may require a new performance test.

### (14.0) 12.108 Availability of Information

(1) Emission data provided to, or otherwise obtained by, the Department in accordance with the provisions of this regulation shall be available to the public at the Department's offices.

(2) As provided in division (1) of this subsection, any records, reports, or information provided to, or otherwise obtained by, the Department in accordance with the provisions of this regulation shall be available to the public, except that (a) upon a showing satisfactory to the Department by any person that such records, reports, or information, or particular part thereof (other than emission data), if made public, would divulge methods or processes entitled to protection as trade secrets of

such person, the Department shall consider such records, reports, or information, or particular part thereof, confidential in accordance with the purposes of Section 1905 of Title 18 of the United States Code, except that such records, reports, or information, or particular part thereof considered confidential, may be disclosed to other officers, employees, or authorized representatives of the Department and the United States concerned with carrying out the provisions of these regulations or when relevant in any proceeding under these regulations; and (b) information received by the Department solely for the purposes of subsections 12.104 and 12.105(1) and (2) shall not be disclosed by the Department if it is identified by the owner or operator and found by the Department to be a trade secret or confidential, commercial or financial information.

(6.0)
(7.0)

## 12.109 Compliance With Standards and Maintenance Requirements

(1) Compliance with standards in this regulation, other than opacity standards, shall be determined only by performance tests established by subsection 12.107.

(2) Compliance with opacity standards in this regulation shall be determined by conducting observations in accordance with Reference Method 9 in Appendix A of this regulation. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with opacity standards. The results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the source shall meet the burden of providing that the instrument used meets (at the time of the alleged violation) Performance Specification 1 in Appendix B of this regulation, has been properly maintained and (at the time of the alleged violation) calibrated, and that the resulting data have not been tampered with in any way.

(3) The opacity standards set forth in this regulation shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard.

(4) At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Deparment which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

(5) (a) An owner or operator of an affected facility may request the Department to determine opacity of emissions from the affected facility during the initial performance tests required by subsection 12.107.

(b) Upon receipt from such owner or operator of the written report of the results of the performance tests required by subsection 12.107, the Department will make a determination concerning compliance with opacity and other applicable standards. If the Department determines that an affected facility is in compliance with all applicable standards for which performance tests are conducted in accordance with subsection 12.107 of this regulation but during the time such performance tests are being conducted fails to meet any applicable opacity standard, it shall notify the owner or operator and advise him that he may petition the Department within 10 days of receipt of notification to make appropriate adjustment to the opacity standard for the affected facility.

(c) The Department will grant such a petition upon a demonstration by the owner or operator that the affected facility and associated air pollution control equipment was operated and maintained in a manner to minimize the opacity of emissions during the performance tests; that the performance tests were performed under the conditions established by the Department; and that the affected facility and associated air pollution control equipment were incapable of being adjusted or operated to meet the applicable opacity standard.

(d) The Department will establish an opacity standard for the affected facility meeting the above requirements at a level at which the source will be able, as indicated by the performance and opacity tests, to meet the opacity standard at all times during which the source is meeting the mass or concentration emission standard. The Department will then promulgate the new opacity standard for such facility.

(2.0) 12.110 Circumvention

No owner or operator subject to the provisions of this regulation shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

(9.0) 12.111 Monitoring Requirements

(1) Unless otherwise approved by the Department or specified in applicable subsections, the requirements of this subsection shall apply to all continuous monitoring systems required under applicable subsections.

(2) All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests under subsection 12.107. Verification of operational status shall, as a minimum, consist of the following:

(a) For continuous monitoring systems referenced in division (3)(a) of this subsection, completion of the conditioning period specified by applicable requirements in Appendix B.

(b) For continuous monitoring systems referenced in division (3)(b) of this subsection, completion of seven days of operation.

(c) For monitoring devices referenced in applicable subsections, completion of the manufacturer's written requirements or recommendations for checking the operation or calibration of the device.

(3) During any performance tests required under subsection 12.107 or within 30 days thereafter and at such other times as may be required by the Department, the owner or operator of any affected facility shall conduct continuous monitoring system performance evaluations and furnish the Department within 60 days thereof two or, upon request, more copies of a written report of the results of such tests. These continuous monitoring system performance evaluations shall be conducted in accordance with the following specifications and procedures:

(a) Continuous monitoring systems listed within this subdivision except as provided in division (3)(b) of this subsection shall be evaluated in accordance with the requirements and procedures contained in the applicable performance specification of Appendix B as follows:

(i) Continuous monitoring systems for measuring opacity of emissions shall comply with Performance Specification 1.

(ii) Continuous monitoring systems for measuring nitrogen oxides emissions shall comply with Performance Specification 2.

(iii) Continuous monitoring systems for measuring sulfur dioxide emissions shall comply with Performance Specification 2.

(iv) Continuous monitoring systems for measuring the oxygen content or carbon dioxide content of effluent gases shall comply with Performance Specification 3.

(b) An owner or operator who, prior to September 11, 1974, entered into a binding contractual obligation to purchase specific continuous monitoring system components except as referenced by division (3)(b)(iii) of this subsection shall comply with the following requirements:

(i) Continuous monitoring systems for measuring opacity of emissions shall be capable of measuring emission levels within ± 20 percent with a confidence level of 95 percent. The Calibration Error Test and associated calculation procedures set forth in Performance Specification 1 of Appendix B shall be used for demonstrating compliance with this specification.

(ii) Continuous monitoring systems for measurement of nitrogen oxides or sulfur dioxide shall be capable of measuring emission levels within ±20 percent with a confidence level of 95 percent. The Calibration Error Test, the Field Test for Accuracy (Relative), and associated operating and calculation procedures set forth in Performance Specification 2 of Appendix B shall be used for demonstrating compliance with this specification.

(iii) Owners or operators of all continuous monitoring systems installed on an affected facility prior to the effective date of this regulation are not required to conduct tests under divisions (3)(b)(i) and/or (ii) of this subsection unless requested by the Department.

(c) All continuous monitoring systems referenced by division (3)(b) of this subsection shall be upgraded or replaced (if necessary) with new continuous monitoring systems, and such improved systems shall be demonstrated to comply with applicable performance specifications under division (3)(a) of this subsection by September 11, 1979.

(4) Owners or operators of all continuous monitoring systems installed in accordance with the provisions of this regulation shall check the zero and span drift at least once daily in accordance with the method prescribed by the manufacturer of such systems unless the manufacturer recommends adjustments at shorter intervals, in which case such recommendations shall be followed. The zero and span shall, as a minimum, be adjusted whenever the 24-hour zero drift or 24-hour calibration draft limits of the applicable performance specifications in Appendix B are exceeded. For continuous monitoring systems measuring opacity of emissions, the optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero or span drift adjustments except that for systems using automatic zero adjustments, the optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds four percent opacity. Unless otherwise approved by the Department, the following procedures, as applicable, shall be followed:

(a) For extractive continuous monitoring systems measuring gases, minimum procedures shall include introducing applicable zero and span gas mixtures into the measurement system as near the probe as is practical. Span and zero gases certified by their manufacturer to be traceable to National Bureau of Standards reference gases shall be used whenever these reference gases are available. The span and zero gas mixtures shall be the same composition as specified in Appendix B of this regulation. Every six months from date of manufacture, span and zero gases shall be reanalyzed by conducting triplicate, analyses with Reference Methods 6 for $SO_2$, 7 for $NO_x$, and 3 for $O_2$ and $CO_2$, respectively. The gases may be analyzed at less frequent intervals if longer shelf lives are guaranteed by the manufacturer.

(b) For non-extractive continuous monitoring systems measuring gases, minimum procedures shall include upscale check(s) using a certified calibration gas cell or test cell which is functionally equivalent to a known gas concentration. The zero check may be performed by computing the zero value from upscale measurements or by mechanically producing a zero condition.

(c) For continuous monitoring systems measuring opacity of emissions, minimum procedures shall include a method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photodetector assembly.

(5) Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under division (4) of this subsection, all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

(a) All continuous monitoring systems referenced by division (3)(a) and (b) of this subsection for measuring opacity of emissions shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 10-second period.

(b) All continuous monitoring systems referenced by division (3)(a) of this subsection for measuring oxides of nitrogen, sulfur dioxide, carbon dioxide, or oxygen shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(c) All continuous monitoring systems referenced by division (3)(b) of this subsection, except opacity, shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive one-hour period.

(6) All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. Additional procedures for location of continuous monitoring systems contained in the applicable Performance Specifications of Appendix B of this regulation shall be used.

(7) When the effluents from a single affected facility or two or more affected facilities subject to the same emission standards are combined before being released to the atmosphere, the owner or operator may install applicable continuous monitoring systems on each effluent or on the combined effluent. When the affected facilities are not subject to the same emission standards, separate continuous monitoring systems shall be installed on each effluent. When the effluent from one affected facility is released to the atmosphere through more than one point, the owner or operator shall install applicable continuous monitoring systems on each separate effluent unless the installation of fewer systems is approved by Department.

(8) Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to six-minute averages and for systems other than opacity to one-hour averages for time periods under subsections 12.102(22) and (16), respectively. Six-minute opacity averages shall be calculated from 24 or more data points equally spaced over each six-minute period. For systems other than opacity, one-hour averages shall be computed from four or more data points equally spaced over each one-hour period. Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this division. An arithmetic or integrated average of all data may be used. The data output of all continuous monitoring systems may be recorded in reduced or nonreduced form (e.g. ppm pollutant and percent $O_2$ or lb/million BTU of pollutant). All excess emissions shall be converted into units of the standard using the applicable conversion procedures specified in subsections. After conversion into units of the standard, the data may be rounded to the same number of significant digjts used in subsections to

specify the applicable standard (e.g. rounded to the nearest one percent opacity).

(a) Upon written application by an owner or operator, the Department may approve alternatives to any monitoring procedures or requirements of this regulation including, but not limited to the following:

  (i) Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this regulation would not provide accurate measurements due to liquid water or other interferences caused by substances with the effluent gases.

  (ii) Alternative monitoring requirements when the affected facility is infrequently operated.

  (iii) Alternative monitoring requirements to accomodate continuous monitoring systems that require additional measurements to correct stack moisture conditions.

  (iv) Alternative locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements.

  (v) Alternative methods of converting pollutant concentration measurements to units of the standards.

  (vi) Alternative procedures for performing daily checks of zero and span drift that do not involve use of span gases or test cells.

  (vii) Alternatives to the A.S.T.M. test methods or sampling procedures specified by any subsection.

  (viii) Alternative continuous monitoring systems that do not meet the design or performance requirements in Performance Specification 1, Appendix B, but adequately demonstrate a definite and consistent relationship between its measurements and the measurements of opacity by a system complying with the requirements in Performance Specification 1. The Department may require that such demonstration be performed for each affected facility.

(ix) Alternative monitoring requirements when the effluent from a single affected facility or the combined effluent from two or more affected facilities are released to the atmosphere through more than one point.

12.200 - 12.300 (RESERVED)

## (2.0) 12.400 STANDARDS OF PERFORMANCE

### (51.5) (51.6) (51.7) 12.401 Standards of Performance for Fossil-Fuel Steam Generators

(1) Applicability and Designation of Affected Facility

The provisions of this subsection are applicable to each fossil fuel-fired steam generating unit of more than 63 million kcal per hour heat input (250 million BTU per hour), which is the affected facility.

(2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act, and in subsection 12.102 of this regulation.

(a) "Fossil fuel-fired steam generating unit" means furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.

(b) "Fossil fuel" means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

(3) Standard for Particulate Matter

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility any gases which:

(i) Contain particulate matter in excess of 0.18 g per million cal heat input (0.10 lb per million BTU) derived from fossil fuel.

(ii) Exhibit greater than 20 percent opacity except that a maximum of 40 percent opacity shall be permissible for not more than 2 minutes in any hour.

(4) Standard for Sulfur Dioxide

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility any gases which contain sulfur dioxide in excess of:

(i) 1.4 g per million cal heat input (0.80 lb per million BTU) derived from liquid fossil fuel.

(ii) 2.2 g per million cal heat input (1.2 lb per million BTU) derived from solid fossil fuel.

(b) When different fossil fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the following formula:

$$\frac{y(1.4) + z(2.2)}{y+z}$$

where:

$y$ is the percentage of total heat input derived from liquid fossil fuel, and

$z$ is the percentage of total heat input derived from solid fossil fuel.

(c) Compliance shall be based on the total heat input from all fossil fuels burned, including gaseous fuels.

(5) Standard for Nitrogen Oxides

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility any gases which contain nitrogen oxides, expressed as $NO_2$ in excess of:

(i) 0.36 g per million cal heat input (0.20 lb per million BTU) derived from gaseous fossil fuel.

(ii) 0.54 g per million cal heat input (0.30 lb per million BTU) derived from liquid fossil fuel.

(iii) 1.26 g per million cal heat input (0.70 lb per million BTU) derived from solid fossil fuel (except lignite).

(b) When different fossil fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration. Compliance shall be determined by using the following formula:

$$\frac{x(0.36) + y(0.54) + z(1.26)}{x + y + z}$$

where:

x is the percentage of total heat input derived from gaseous fossil fuel.

y is the percentage of total heat input derived from liquid fossil fuel, and

z is the percentage of total heat input derived from solid fossil fuel (except lignite).

(6) Emission and Fuel Monitoring

(a) A continuous monitoring system for measuring the opacity of emissions, except where gaseous fuel is the only fuel burned, shall be installed, calibrated, maintained, and operated by the owner or operator. The continuous monitoring system shall be spanned at 80 or 90 or 100 percent opacity.

(b) A continuous monitoring system for measuring sulfur dioxide emissions, shall be installed, calibrated, maintained, and operated by the owner or operator except where gaseous fuel is the only fuel burned or where low sulfur fuels are used to achieve compliance with the standard under subsection 12.401(4) and (b)(ii) of this division are conducted. The following procedures shall be used for monitoring sulfur dioxide emissions:

(i) For affected facilities which use continuous monitoring systems, Reference Method 6 shall be used for conducting monitoring system performance evaluations under subsection 12.111(3). The pollutant gas used to prepare calibration gas mixtures under paragraph 2.1, Performance Specification 2 and for calibration checks under subsection 12.111(4) to this regulation, shall be sulfur dioxide ($SO_2$). The span value for the continuous monitoring system shall be determined as follows:

((a)) For affected facilities firing liquid fossil fuel the span value shall be 1000 ppm sulfur dioxide.

((b)) For affected facilities firing solid fossil fuel the span value shall be 1500 ppm sulfur dioxide.

((c)) For affected facilities firing fossil fuels in any combination, the span value shall be determined by computation in accordance with the following formula and rounding to the nearest 500 ppm sulfur dioxide:

$1000y + 1500Z$

where:

$y$ = the fraction of total heat input derived from liquid fossil fuel, and

$z$ = the fraction of total heat input derived from solid fossil fuel.

((d)) For affected facilities which fire both fossil fuels and non-fossil fuels, the span value shall be subject to the Department's approval.

(ii) (Reserved)

(iii) For affected facilities using flue gas desulfurization systems to achieve compliance with sulfur dioxide standards under subsection 12.401(4), the continuous monitoring system for measuring sulfur dioxide emissions shall be located downstream of the desulfurization system and in accordance with requirements in

Performance Specification 2 of Appendix B and the following:

((a)) Owners or operators shall install $CO_2$ continuous monitoring systems, if selected under subdivision (d) of this division, at a location upstream of the desulfurization system. This option may be used only if the owner or operator can demonstrate that air is not added to the flue gas between the $CO_2$ continuous monitoring system and each system measures the $CO_2$ and $SO_2$ on a dry basis.

((b)) Owners or operators who install $O_2$ continuous monitoring systems under subdivision (d) of this division shall select a location downstream of the desulfurization system and all measurements shall be made on a dry basis.

((c)) If fuel of a different type than is used in the boiler is fired directly into the flue gas for any purpose (e.g. reheating) the F or Fc factors used shall be prorated under subdivision (f)(vi) of this division with consideration given to the fraction of total heat input supplied by the additional fuel. The pollutant, opacity, $CO_2$, or $O_2$ continuous monitoring system(s) shall be installed downstream of any location at which fuel is fired directly into the flue gas.

(c) A continuous monitoring system for the measurement of nitrogen oxides emissions shall be installed, calibrated, maintained, and operated by the owner or operator except for any affected facility demonstrated during performance tests under subsection 12.107 to emit nitrogen oxides pollutants at levels 30 percent or more below applicable standards under subsection 12.401(5) of this regulation. The following procedures shall be used for determining the span and for calibrating nitrogen oxides continuous monitoring systems:

(i) The span value shall be determined as follows:

((a)) For affected facilities firing gaseous fossil fuel the span value shall be 500 ppm nitrogen oxides.

((b)) For affected facilities firing liquid fossil fuel the span value shall be 500 ppm nitrogen oxides.

((c)) For affected facilities firing solid fossil fuel the span value shall be 1000 ppm nitrogen oxides.

((d)) For affected facilities firing fossil fuels in any combination, the span value shall be determined by computation in accordance with the following formula and rounding to the nearest 500 ppm nitrogen oxides:

$$500(x + y) + 1000z$$

where:

$x$ = the fraction of total heat input derived from gaseous fossil fuel,

$y$ = the fraction of total heat input derived from liquid fossil fuel, and

$z$ = the fraction of total heat input derived from solid fossil fuel.

((e)) For affected facilities which fire both fossil fuels and non-fossil fuels, the span value shall be subject to the Department's approval.

(ii) The pollutant gas used to prepare calibration gas mixtures under paragraph 2.1, Performance Specification 2 and for calibration checks under subsection 12.111(4) to this regulation, shall be nitric oxide (NO). Reference Method 7 shall be used for conducting monitoring system performance evaluations under subsection 12.111(3).

(d) A continuous monitoring system for measuring either oxygen or carbon dioxide in the flue gases shall be installed, calibrated, maintained, and operated by the owner or operator.

(e) An owner or operator required to install continuous monitoring systems under subdivisions (b) and (c) of this division shall for each pollutant monitored use the applicable conversion procedure for the purpose of converting continuous monitoring data into units of the applicable standards (g/million cal, lb/million BTU) as follows:

(i) When the owner or operator elects under subdivision (d) of this division to measure oxygen in the flue gases, the measurement of the pollutant concentration and oxygen concentration shall each be on a dry basis and the following conversion procedure shall be used.

$$E = CF \left(\frac{20.9}{20.9-\%O_2}\right)$$

where:

E, C, F and $\%O_2$, are determined under subdivision (f) of this division.

(ii) When the owner or operator elects under subdivision (d) of this division to measure carbon dioxide in the flue gases, the measurement of the pollutant concentration and the carbon dioxide concentration shall be on a consistent basis (wet or dry) and the following conversion procedure shall be used:

$$E = CF_c \left(\frac{100}{\%CO_2}\right)$$

where:

E, C, Fc, and $\%CO_2$ are determined under subdivision (f) of this division.

(f) The values used in the equations under subdivision (e)(i) and (ii) of this division are derived as follows:

(i) E = pollutant emission, g/million cal (lb/million BTU).

(ii) C = pollutant concentration, g/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by $4.15 \times 10^{-5}$ M g/dscm per ppm ($2.59 \times 10^{-9}$ M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64.07 for sulfur dioxide and 46.01 for nitrogen oxides.

(iii) $\%O_2$, $\%CO_2$= oxygen or carbon dioxide volume (expressed as percent), determined with equipment specified under subdivision (d) of this division.

(iv) F, Fc = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F) and a factor representing a ratio of the volume of carbon dioxide generated to the calorific value of the fuel combusted (Fc), respectively. Values of F and Fc are given as follows:

((a)) For anthracite coal as classified according to A.S.T.M. D388-66, F = 1.139 dscm/million cal (10140 dscf/million BTU) and Fc = 0.222 scm $CO_2$/million cal (1980 scf $CO_2$/million BTU).

((b)) For sub-bituminous and bituminous coal as classified according to A.S.T.M. D388-66, F = 1.103 dscm/million cal (9820 dscf/million BTU) and Fc = 0.203 scm $CO_2$/million cal (1810 scf $CO_2$/million BTU).

((c)) For liquid fossil fuels including crude, residual, and distillate oils, F = 1.036 dscm/million cal (9220 dscf/million BTU) and Fc = 0.161 scm $CO_2$/million cal (1430 scf $CO_2$/million BTU).

((d)) For gaseous fossil fuels, F = 0.982 dscm/million cal (8740 dscf/million BTU). For natural gas, propane, and butane fuels, Fc = 0.117 scm $CO_2$/million cal (1040 scf $CO_2$/million BTU) for natural gas, 0.135 scm $CO_2$/million BTU) for propane, and 0.142 scm $CO_2$/million cal (1260 scf $CO_2$/million BTU) for butane.

(v) The owner or operator may use the following equation to determine an F factor (dscm/million cal, or dscf/million BTU) on a dry basis (if it is desired to calculate F on a wet basis, consult with the Department) of $F_c$ factor (scm $CO_2$/million cal, or scf $CO_2$/million BTU) on either basis in lieu of the F or Fc factors specified in subdivision (f)(iv) of this division:

$$F = \frac{(227.0\%H + 95.7\%C + 35.4\%S + 8.6\%N\ 28.5\%O)}{GCV} \quad \text{(metric units)}$$

$$F = 10^6\ \frac{(3.64\%H + 1.53\%C + 0.57\%S + 0.14\%N\ 0.46\%O)}{GCV} \quad \text{(English Units)}$$

$$Fc = \frac{20.0\%C}{GCV} \quad \text{(metric units)}$$

$$Fc = \frac{321 \times 10^3\%C}{GVC} \quad \text{(English units)}$$

((a)) H,C,S,N, and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using A.S.T.M. method D3178-74 or D3176 (solid fuels), or computed from results using A.S.T.M. methods D1137-53(70), D1945-64(73), or D1946-67(72) (gaseous fuels) as applicable.

((b)) GCV is the gross calorific value (cal/g, BTU/lb) of the fuel combusted, determined by the A.S.T.M. test methods D2015-66(72) for solid fuels and D1826-64(70) for gaseous fuels as applicable.

(vi) For affected facilities firing combinations of fossil fuels, the F or Fc factors determined by subdivision (f)(iv) or (v) of this division shall be prorated in accordance with the applicable formula as follows:

((a)) $F = xF_1 + yF_2 + zF_3$

where:

x, y, z = the fraction of total heat input derived from gaseous, liquid, and solid fuel, respectively.

F1, F2, F3 = the value of F for gaseous, liquid, and solid fossil fuels, respectively under subdivision (f)(iv) or (v) of this division.

((b)) $Fc = \sum_{i=1}^{n} X_i(F_c)i$

where:

$X_i$ = the fraction of total heat input derived from each type fuel (e.g., natural gas, butane, crude, bituminous coal, etc.).

$(F_c)_i$ = the applicable Fc factor for each fuel type determination in accordance with subdivision (f)(iv) and (v) of this division.

((c)) For affected facilities which fire both fossil fuels and non-fossil fuels, the F or Fc value shall be subject to the Department's approval.

(g) For the purpose of reports required under subsection 12.106(3), periods of excess emissions that shall be reported are defined as follows:

(i) (Reserved)

(ii) Sulfur dioxide. Excess emissions for affected facilities are defined as:

((a)) Any three-hour period during which the average emissions (arithmetic average of three contigous one-hour periods) of sulfur dioxide as measured by a continuous monitoring system exceed the applicable standard under subsection 12.401(4).

((b)) (Reserved)

(iii) Nitrogen oxides. Excess emissions for affected facilities using a continuous monitoring system for measuring nitrogen oxides are defined as any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) exceed the applicable standards under subsection 12.401(5).

(7) Test Methods and Procedures

(a) The reference methods in Appendix A of this regulation, except as provided in subsection 12.107(2), shall be used to determine compliance with the standards as prescribed in subsections 12.401(3), 12.401(4), and 12.401(5) as follows:

(i) Method 1 for selection of sampling site and sample traverses.

(ii) Method 3 for gas analysis to be used when applying Reference Methods 5, 6 and 7.

(iii) Method 5 for concentration of particulate matter and the associated moisture content.

(iv) Method 6 for concentration of $SO_2$ and

(v) Method 7 for concentration of $NO_x$.

(b) For Method 5, Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller sampling times or volumes, when necessitated by process variables or other factors, may be approved by the Department. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature no greater than $160^{o}$C (320f).

(c) For Methods 6 and 7, the sampling site shall be the same as that selected for Method 5. The sampling point in the duct shall be at the centroid of the cross section or at a point no closer to the walls than 1 m(3.28 ft). For Method 6, the sample shall be extracted at a rate proportional to the gas velocity at the sampling point.

(d) For Method 6, the minimum sampling time shall be 20 minutes and the minimum sampling volume 0.02 dscm (0.71 dscf) for each sample. The arithmetic mean of two samples shall consitute one run. Samples shall be taken at approximately 30-minute intervals.

(e) For Method 7, each run shall consist of at least four grab samples taken at approximately 15-minute intervals. The arithmetic mean of the samples shall constitute the run value.

(f) For each run using the methods specified by subdivisions (a)(iii), (iv), and (v) of this division, the emissions expressed in g/million cal (lb/million BTU) shall be determined by the following procedures:

$$E = CF \left(\frac{20.9}{20.9 - \%O_2}\right)$$

where:

(i) E = pollutant emission g/million cal (lb/million BTU).

(ii) C = pollutant concentration, g/dscm (lb/dscf), determined by Methods 5, 6, or 7.

(iii) $\%O_2$ = oxygen content by volume (expressed as percent), dry basis. Percent oxygen shall be determined by using the integrated or grab sampling and analysis procedures of Method 3 as applicable. The sample shall be obtained as follows:

((a)) For determination of sulfur dioxide and nitrogen oxides emissions, the oxygen sample shall be obtained simultaneously at the same point in the duct as used to obtain the samples for Methods 6 and 7 determinations, respectively subsection 12.401(7)(c). For Method 7, the oxygen sample shall be obtained using the grab sampling and analysis procedures of Method 3.

((b)) For determination of particulate emissions, the oxygen sample shall be obtained simultaneously by traversing the duct at the same sampling location used for each run of Method 5 under subdivision (b) of this division. Method 1 shall be used for selection of the number of traverse points except that no more than 12 sample points are required.

(iv) F=a factor as determined in subdivision (f) (iv), (v) or (vi) of subsection 12.401(6).

(g) When combinations of fossil fuels are fired, the heat input, expressed in cal/hr (BTU/hr), shall be determined during each testing period by multiplying the gross calorific value of each fuel fired by the rate of each fuel burned. Gross calorific value shall be determined in accordance with A.S.T.M. methods D2015-66(72) (solid fuels), D240-64(73) (liquid fuels), or D1826-64(70) (gaseous fuels) as applicable. The rate of fuels burned during each testing period shall be determined by suitable methods and shall be confirmed by a material balance over the steam generation system.

## (51.9) 12.402 Standards of Performance for Incinerators

### (1) Applicability and Designation of Affected Facility

The provisions of this subsection are applicable to each incinerator of more than 45 metric tons per day charging rate (50 tons/day), which is the affected facility.

### (2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Incinerator" means any furnace used in the process of burning solid waste for the purpose of reducing the volume of the waste by removing combustible matter.

(b) "Solid waste" means refuse, more than 50 percent of which is municipal type waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustibles, and non-combustible materials such as glass and rock.

(c) "Day" means 24 hours.

### (3) Standard for Particulate Matter

On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.18 g/dscm (0.08 gr/dscf) corrected to 12 percent $CO_2$.

(4) Monitoring of Operations

The owner or operator of any incinerator subject to the provisions of this subsection shall record the daily charging rates and hours of operation.

(5) Test Methods and Procedures

(a) The reference methods in Appendix A to this regulation, except as provided for in subsection 12.107(2), shall be used to determine compliance with the standard prescribed in division (3) of this subsection as follows:

(i) Method 5 for the concentration of particulate matter and the associated moisture content;

(ii) Method 1 for sample and velocity traverses;

(iii) Method 2 for velocity and volumetric flow rate; and

(iv) Method 3 for gas analysis and calculation of excess air, using the integrated sample technique.

(b) For Method 5, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be 0.85 dscm (30.0 dscf) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the Department.

(c) If a wet scrubber is used, the gas analysis sample shall reflect flue gas conditions after the scrubber, allowing for carbon dioxide absorption by sampling the gas on the scrubber inlet and outlet sides according to either the procedure under subdivisions (c)(i) through (c)(v) of this division or the procedure under subdivisions (c)(i), (c)(ii) and (c)(vi) of this subdivision as follows:

(i) The outlet sampling site shall be the same as for the particulate matter measurement. The inlet site shall be selected according to Method 1, or as specified by the Department.

(ii) Randomly select 9 sampling points within the cross-section at both the inlet and outlet sampling sites. Use the first set of three for the first run, the second set for the second run, and the third set for the third run.

(iii) Simultaneously with each particulate matter run, extract and analyze for $CO_2$ an integrated gas sample according to Method 3, traversing the three sample points and sampling at each point for equal increments of time. Runs shall be conducted at both inlet and outlet sampling sites.

(iv) Measure the volumetric flow rate at the inlet during each particulate matter run according to Method 2, using the full number of traverse points. For the inlet make two full velocity traverses approximately one hour apart during each run and average the results. The outlet volumetric flow rate may be determined from the particulate matter run (Method 5).

(v) Calculate the adjusted $CO_2$ percentage using the following equation:

$$(\% \; CO_2)\,adj = (\% \; CO_2)\,di \; (Q_{di}/Q_{do})$$

where:

$(\% \; CO_2)adj$ is the adjusted $CO_2$ percentage which removes the effect of $CO_2$ absorption and dilution air,

$(\% \; CO_2)di$ is the percentage of $CO_2$, measured before the scrubber, dry basis,

$Q_{di}$ is the volumetric flow rate before the scrubber, average of two runs, dscf/min (using Method 2), and

$Q_{do}$ is the volumetric flow rate after the scrubber, dscf/min (using Methods 2 and 5).

(vi) Alternatively, the following procedures may be substituted for the procedures under subdivisions (c)(iii), (iv), and (v) of this division.

((a)) Simultaneously with each particulate matter run, extract and analyze for $CO_2$, $O_2$, and $N_2$ an integrated gas sample according to Method 3, traversing the three sample points and sampling for equal increments of time at each point. Conduct the runs at both the inlet and outlet sampling sites.

((b)) After completing the analysis of the gas sample, calculate the percentage of excess air (% EA) for both the inlet and outlet sampling sites using equation 3-1 in Appendix A to this regulation.

((c)) Calculate the adjusted $CO_2$ percentage using the following equation:

$$(\% \ CO_2)adj = (\% \ CO_2) \ di \ \frac{100+(\% \ EA) \ i}{100+(5 \ EA) \ o}$$

where:

$(\% \ CO_2)adj$ is the adjusted outlet $CO_2$ percentage,

$(\% \ CO_2)_{di}$ is the percentage of $CO_2$ measured before the scrubber, dry basis,

$(\% \ EA)_i$ is the percentage of excess air at the inlet, and

$(\% \ EA)_o$ is the percentage of excess air at the outlet.

((d)) Particulate matter emissions, expressed in g/dscm, shall be corrected to 12 percent $CO_2$ by using the following formula:

$$c_{12} = \frac{12c}{\% \ CO_2}$$

where:

$c_{12}$ is the concentration of particulate matter corrected to 12 percent $CO_2$,

| | |
|---|---|
| $c$ | is the concentration of particulate matter as measured by Method 5, |
| $\% CO_2$ | is the percentage of $CO_2$ as measured by Method 3, or when applicable, the adjusted outlet $CO_2$ percentage as determined by subdivision (c) of this division. |

(51.3) 12.403 Standards of Performance for Portland Cement Plants

(1) Applicability and Designation of Affected Facility

The provisions of this subsection are applicable to the following affected facilities in portland cement plants: kiln, clinker cooler, raw mill system, finish mill system, raw mill dryer, raw material storage, clinker storage, conveyor transfer points, bagging and bulk loading and unloading systems.

(2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Portland cement plant" means any facility manufacturing portland cement by either the wet or dry process.

(3) Standard for Particulate Matter

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any kiln any gases which:

(i) Contain particulate matter in excess of 0.15 kg per metric ton of feed (dry basis) to the kiln (0.30 lb per ton).

(ii) Exhibit greater than 10 percent opacity.

(b) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any clinker cooler any gases which:

(i) Contain particulate matter in excess of 0.050 kg per metric ton of feed (dry basis) to the kiln (0.10 lb per ton).

(ii) Exhibit 10 percent opacity, or greater.

(c) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility, other than the kiln and clinker cooler, any gases which exhibit 10 percent opacity or greater.

(4) Monitoring of Operations

(a) The owner or operator of any portland cement plant subject to the provisions of this subsection shall record the daily production rates and kiln feed rates.

(5) Test Methods and Procedures

(a) The reference methods in Appendix A to this regulation, except as provided for in subsection 12.107(2), shall be used to determine compliance with the standards prescribed in division (3) of this section subsection as follows:

(i) Method 5 for the concentration of particulate matter and the associated moisture content;

(ii) Method 1 for sample and velocity traverses;

(iii) Method 2 for velocity and volumetric flow rate; and

(iv) Method 3 for gas analysis.

(b) For Method 5, the minimum sampling time and minimum sample volume for each run, except when process variables or other factors justify otherwise to the satisfaction of the Department shall be as follows:

(i) 60 minutes and 0.85 dscm (30.0 dscf) for the kiln.

(ii) 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler.

(c) Total kiln feed rate (except fuels), expressed in metric tons per hour on a dry basis, shall be determined during each testing period by suitable methods; and shall be confirmed by a material balance over the production system.

(d) For each run, particulate matter emissions, expressed in g/metric ton of kiln feed, shall be determined by dividing the emission rate in g/hr by the kiln feed rate. The emission rate shall be determined by the equation, $g/hr = Q_s xc$, where $Q$ = volumetric flow rate of the total effluent in dscm/hr as determined in accordance with subdivision (a)(iii) of this division and $c$ = particulate concentration in g/dscm as determined in accordance with subdivisions (a) and (c) of this division.

## (51.10) 12.404 Standards of Performance for Nitric Acid Plants

### (1) Applicability and Designation of Affected Facility

The provisions of this subsection are applicable to each nitric acid production unit, which is the affected facility.

### (2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in Section 12.102 of this regulation.

(a) "Nitric acid production unit" means any facility producing weak nitric acid by either the pressure or atmosphere pressure process.

(b) "Weak nitric acid" means acid which is 30 to 70 percent in strength.

### (3) Standard for Nitrogen Oxides

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility any gases which:

(i) Contain nitrogen oxides, expressed as $NO_2$, in excess of 1.5 kg per metric ton of acid produced (3.0 lb per ton), the production being expressed as 100 percent nitric acid.

(ii) Exhibit 10 percent opacity, or greater.

(4) Emission Monitoring

(a) A continuous monitoring system for the measurement of nitrogen oxides shall be installed, calibrated, maintained, and operated by the owner or operator. The pollutant gas used to prepare calibration gas mixtures under paragraph 2.1, Performance Specification 2 and for calibration checks under subsection 12.111(4) to this regulation, shall be nitrogen dioxide ($NO_2$). The span shall be set at 500 ppm of nitrogen dioxide. Reference Method 7 shall be used for conducting monitoring system performance evaluations under 12.111(3).

(b) The owner or operator shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/short ton). The conversion factor shall be established by measuring emissions with the continuous monitoring system concurrent with measuring emissions with the applicable reference method tests. Using only that portion of the continuous monitoring emission data that represents emission measurements concurrent with the reference method test periods, the conversion factor shall be determined by dividing the reference method test data averages by the monitoring data averages to obtain a ratio expressed in units of the applicable standard to units of the monitoring data, i.e., kg/metric ton per ppm (lb/short ton per ppm). The conversion factor shall be re-established during any performance test under subsection 12.107 or any continuous monitoring system performance evaluation under subsection 12.111(3).

(c) The owner or operator shall record the daily production rate and hour of operation.

(d) (Reserved)

(e) For the purpose of reports required under subsection 12.106(3), periods of excess emissions that shall be reported are defined as any three-hour period during which the average nitrogen oxides emissions (arithmetic average of three contiguous one-hour periods) as measured by a continuous monitoring system exceed the standard under subsection 12.404(3)(a).

(5) Test Methods and Procedures

(a) The reference methods in Appendix A to this regulation, except as provided for in subsection 12.107(2), shall be used to determine compliance with the standard prescribed in division (3) of this subsection as follows:

(i) Method 7 for the concentration of $NO_x$;

(ii) Method 1 for sample and velocity traverses;

(iii) Method 2 for velocity and volumetric flow rate; and

(iv) Method 3 for gas analysis.

(b) For Method 7, the sample site shall be selected according to Method 1 and the sampling point shall be the centroid of the stack or duct or at a point no closer to the walls than 1 m (3.28 ft). Each run shall consist of at least four grab samples taken at approximately 15-minute intervals. The arithmetic mean of the samples shall constitute the run value. A velocity traverse shall be performed once per run.

(c) Acid production rate, expressed in metric tons per hour of 100 percent nitric acid, shall be determined during each testing period by suitable methods and shall be confirmed by a material balance over the production system.

(d) For each run, nitrogen oxides, expressed in g/metric ton of 100 percent nitric acid, shall be determined by dividing the emission rate in g/hr by the acid production rate. The emission rate shall be determined by the equation,

$$g/hr = Q_s x c$$

where:

$Q_s$ = volumetric flow rate of the effluent in dscm/hr, as determined in accordance with subdivision (a)(iii) of this division and c = $NO_x$ concentration in g/dscm, as determined in accordance with subdivision (a)(i) of this division.

## (51.18) 12.405 Standards of Performance for Sulfuric Acid Plants

### (1) Applicability and Designation of Affected Facility

The provisions of this subsection are applicable to each sulfuric acid production unit, which is the affected facility.

### (2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Sulfuric acid production unit" means any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides and mercaptans, or acid sludge, but does not include facilities where conversion to sulfuric acid is utilized primarily as a means of preventing emissions to the atmosphere of sulfur dioxide or other sulfur compounds.

(b) "Acid mist" means sulfuric acid mist, as measured by Method 8 of Appendix A to this regulation or an equivalent or alternative method.

### (3) Standard for Sulfur Dioxide

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility any gases which contain sulfur dioxide in excess of 2 kg per metric ton of acid produced (4 lb per ton), the production being expressed as 100 percentage $H_2SO_4$.

(4) Standard for Acid Mist

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility any gases which:

(i) Contain acid mist, expressed as $H_2SO_4$, in excess of 0.075 kg per metric ton of acid produced (0.15 lb per ton), the production being expressed as 100 percent $H_2SO_4$.

(ii) Exhibit 10 percent opacity, or greater.

(5) Emission Monitoring

(a) A continuous monitoring system for the measurement of sulfur dioxide shall be installed, calibrated, maintained, and operated by the owner or operator. The pollutant gas used to prepare calibration gas mixtures under paragraph 2.1, Performance Specification 2 and for calibration checks under subsection 12.111(4) except that only the sulfur dioxide ($SO_2$). Reference Method 8 shall be used for conducting monitoring system performance evaluations under subsection (12.111(3) except that only the sulfur dioxide portion of the Method 8 results shall be used. The span shall be set at 1000 ppm of sulfur dioxide.

(b) The owner or operator shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/short ton). The conversion factor shall be determined, as a minimum, three times daily by measuring the converter using suitable methods (e.g., the Reich test, National Air Pollution Control Administration Publication No. 999AP-13 and calculating the appropriate conversion factor for each eight-hour period as follows:

$$CF = K \frac{1.000 - 0.015r}{r - s}$$

where:

CF = conversion factor (kg/metric ton per ppm, lb/short ton per ppm).

k = Constant derived from material balance. For determining CF in metric units, k = 0.0653. For determining CF in English units, k = 0.1306.

r = percentage of sulfur dioxide by volume entering the gas converter. Appropriate corrections must be made for air injection plants subject to the Department's approval.

s = percentage of sulfur dioxide by volume in the emissions to the atmosphere determined by the continuous monitoring system required under subdivision (a) of this division.

(c) The owner or operator shall record all conversion factors and values under subdivision (b) of this division from which they were computed (i.e., CF, r, and s).

(d) (Reserved)

(e) For the purpose of reports under subsection 12.106(3), periods of excess emissions shall be all three-hour periods (or the arithmetic average of three consecutive one-hour periods) during which the integrated average sulfur dioxide emissions exceed the applicable standards under subsection 12.405(3).

(6) Test Methods and Procedures

(a) The reference methods in Appendix A to this regulation, except as provided for in subsection 12.107(2), shall be used to determine compliance with the standards prescribed in divisions (3) and (4) of this subsection as follows:

(i) Method 8 for the concentrations of $SO_2$ and acid mist;

(ii) Method 1 for sample and velocity traverses:

(iii) Method 2 for velocity and volumetric flow rate; and

(iv) Method 3 for gas analysis.

(b) The moisture content can be considered to be zero. For Method 8 the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be 1.15 dscm (40.6 dscf) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the Department.

(c) Acid production rate, expressed in metric tons per hour of 100 percent $H_2SO_4$, shall be determined during each testing period by suitable methods and shall be confirmed by a material balance over the production system.

(d) Acid mist and sulfur dioxide emissions, expressed in g/metric ton of 100 percent $H_2SO_4$, shall be determined by dividing the emission rate in g/hr by the acid production rate. The emission rate shall be determined by the equation, $g/hr = Q_s x c$, where $Q_s$ = volumetric flow rate of the effluent in dscm/hr as determined in accordance with subdivision (a)(iii) of this division and c = acid mist and $SO_2$ concentrations in g/dscm as determined in accordance with subdivision (a)(i) of this division.

## (51.8) 12.406 Standards of Performance for Asphalt Concrete Plants

### (1) Applicability and Designation of Affected Facility

The affected facility to which the provisions of this subsection apply is each asphalt concrete plant. For the purpose of this subsection, an asphalt concrete plant is comprised only of any combination of the following: Dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing asphalt concrete; and the loading, transfer, and storage systems associated with emission control systems.

### (2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Asphalt concrete plant" means any facility, as described in division (1) of this subsection, used to manufacture asphalt concrete by heating and drying aggregate and mixing with asphalt cements.

(3) Standard for Particulate Matter

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall discharge or cause the discharge into the atmosphere from any affected facility any gases which:

(i) Contain particulate matter in excess of 90 mg/dscm (0104 gr/dscf).

(ii) Exhibit 20 percent opacity, or greater.

(4) Test Methods and Procedures

(a) The reference methods appended to this regulation, except as provided for in subsection 12.107(2), shall be used to determine compliance with the standards prescribed in division (3) of this subsection as follows:

(i) Method 5 for the concentration of particulate matter and the associated moisture content.

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(b) For Method 5, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the Department.

(51.15) 12.407 Standards of Performance for Petroleum Refineries

(1) Applicability and Designation of Affected Facility

The provisions of this subsection are applicable to the following affected facilities in petroleum refineries: Fluid catalytic cracking unit catalyst regenerators, fluid catalytic cracking unit incinerator-waste heat boilers, and fuel gas combustion devices.

(2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102:

(a) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives.

(b) "Petroleum" means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(c) "Process gas" means any gas generated by a petroleum refinery process unit, except fuel gas and process upset gas as defined in this section.

(d) "Fuel gas" means any gas which is generated by a petroleum refinery process unit and which is combusted, including any gaseous mixture of natural gas and fuel gas which is combusted.

(e) "Process upset gas" means any gas generated by a petroleum refinery process unit as a result of start-up, shut-down, upset or malfunction.

(f) "Refinery process unit" means any segment of the petroleum refinery in which a specific processing operation is conducted.

(g) "Fuel gas combustion device" means any equipment, such as process heaters, boilers and flares used to combust fuel gas, but does not include fluid coking unit and fluid catalytic cracking unit incinerator-waste heat boilers or facilities in which gases are combusted to produce sulfur or sulfuric acid.

(h) "Coke burn-off" means the coke removed from the surface of the fluid catalytic cracking unit catalyst by combustion in the catalyst regenerator. The rate of coke burn-off is calculated by the formula specified in division (7) of this subsection.

(3) Standard for Particulate Matter

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall discharge or cause the discharge into the atmosphere from any fluid catalytic cracking unit catalyst regenerator or from any fluid catalytic cracking unit incinerator-waste heat boiler:

(i) Particulate matter in excess of 1.0 kg/1000 kg (1.0 lb/1000 lb) of coke burn-off in the catalyst regenerator.

(ii) Gases exhibiting 30 percent opacity or greater, except for 3 minutes in any 1 hour.

(b) In those instances in which auxiliary liquid or solid fossil fuels are burned in the fluid catalytic cracking unit incinerator-waste heat boiler, particulate matter in excess of that permitted by subdivision (a)(i) of this division may be emitted to the atmosphere, except that the incremental rate of particulate emissions shall not exceed 0.18 g/million cal (0.10 lb/million BTU) of heat input attributable to such liquid or solid fuel.

(4) Standard for Carbon Monoxide

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall discharge or cause the discharge into the atmosphere from the fluid catalytic cracking unit catalyst regenerator any gases which contain carbon monoxide in excess of 0.050 percent by volume.

(5) Standard for Sulfur Dioxide

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall burn in any fuel gas combustion device any fuel gas which contains $H_2S$ in excess of 230 mg/dscm (0.10 gr/dscf), except as provided in subdivision (b) of this division. The combustion of process upset gas in a flare of process gas or fuel gas which is released to the flare as a result of relief valve leakage, is exempt from this subdivision.

(b) The owner or operator may elect to treat the gases resulting from the combustion of fuel gas in a manner which limits the release of $SO_2$ to the atmosphere if it is shown to the satisfaction of the Department that this prevents $SO_2$ emissions as effectively as compliance with the requirements of subdivision (a) of this division.

(6) Emission Monitoring

(a) Continuous monitoring systems shall be installed, calibrated, maintained, and operated by the owner or operator as follows:

(i) A continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the fluid catalytic cracking unit catalyst regenerator. The continuous monitoring system shall be spanned at 60, 70, or 80 percent opacity.

(ii) (Reserved)

(iii) A continuous monitoring system for the measurement of sulfur dioxide in the gases discharged into the atmosphere from the combustion of fuel gases (except where a continuous monitoring system for the measurement of hydrogen sulfide is installed under subdivision (a)(iv) of this division. The pollutant gas used to prepare calibration gas mixtures under paragraph 2.1, Performance Specification 2 and for calibration gas mixtures under paragraph 2.1, Performance Specification 2 and for calibration checks under subsection 12.111(4) to this regulation, shall be sulfur dioxide ($SO_2$). The span shall be set at 100 ppm. For conducting monitoring system performance evaluations under subsection 12.111 (3), Reference Method 6 shall be used.

(iv) (Reserved)

(b) (Reserved)

(c) The average coke burn-off rate (thousands of kilogram/hr) and hours of operation for any fluid catalytic cracking unit catalyst regenerator subject to divisions (3) and (4) of this subsection shall be recorded daily.

(d) For any fluid catalytic cracking unit catalyst regenerator which is subject to division (3) of this subsection and which utilizes an incinerator-waste heat boiler to combust the exhaust gases from the catalyst regenerator, the owner or operator shall record daily the rate of combustion of liquid or solid fossil fuels (liters/hr or kilograms/hr) and the hours of operation during which liquid or solid fossil fuels are combusted in the incinerator-waste heat boiler.

(e) For the purpose of reports under subsection 12.106 (3) periods of excess emissions that shall be reported are defined as follows:

(i) (Reserved)

(ii) (Reserved)

(iii) (Reserved)

(iv) Any six-hour period during which the average emissions (arithmetic average of six contiguous one-hour periods) of sulfur dioxide as measured by a continuous monitoring system exceed the standard under subsection 12.407(5).

(7) Test Methods and Procedures

(a) For the purpose of determining compliance with subsection 12.407(3)(a)(i), the following reference methods and calculation procedures shall be used:

(i) For gases released to the atmosphere from the fluid catalytic cracking unit catalyst regenerator;

((a)) Method 5 for the concentration of particulate matter and moisture content,

((b)) Method 1 for sample and velocity traverses, and

((c)) Method 2 for velocity and volumetric flow rate.

(ii) For Method 5, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.015 dscm/min (0.53 dscf/min), except that shorter sampling times may be approved by the Department when process variables or other factors preclude sampling for at least 60 minutes.

(iii) For exhaust gases from the fluid catalytic cracking unit catalyst regenerator prior to the emission control system: the integrated sample techniques of Method 3 and Method 4 for gas analysis and moisture content, respectively; Method 1 for velocity traverses; and Method 2 for velocity and volumetric flow rate.

(iv) Coke burn-off rate shall be determined by the following formula:

$$R_c = 0.2982\ Qre(\%CO_2+\%CO)+2.088\ Qra^{-0.0994}Qre\ (\frac{\%CO}{2}+\%CO_2+\%O_2)$$

(Metric Units)

or

$$R_c = 0.0186\ Qre(\%CO_2+\%CO)+0.1303\ Qra^{-0.0062}Qre\ (\frac{\%CO}{2}+\%CO_2+\%o_2)$$

(English Units)

where:

$R_c$ = coke burn-off rate, kg/hr (English units: lb/hr).
0.2982 = metric units material balance factor divided by 100, kg-min/hr-$m^3$.
0.0186 = English units material balance factor divided by 100, lb-min/hr-$ft^3$.
Qre = fluid catalytic cracking unit catalyst regenerator exhaust gas flow rate before entering the emission control system, as determined by Method 2, dscm/min (English units: dscf/min).
$\%CO_2$ = percent carbon dioxide by volume, dry basis, as determined by Method 3.
%CO = percent carbon monoxide by volume, dry basis, as determined by Method 3.
$\%O_2$ = percent oxygen by volume, dry basis, as determined by Method 3.
2.088 = metric units material balance factor divided by 100, kg-min/hr-$m^3$.
0.1303 = English units material balance factor divided by 100, lb-min/hr-$ft^3$.
Qra = air rate to fluid catalytic cracking unit catalyst regenerator, as determined from fluid catalytic cracking unit control room instrumentation dscm/min (English units: dscf/min).

0.0994 = metric units material balance factor divided by 100, kg-min/hr-$m^3$.

0.0062 = English units material balance factor by 100, lb-min/hr-$ft^3$.

(v) Particulate emissions shall be determined by the following equation:

$$R_E = (60\times10^{-6})QrvC_3 \text{ (Metric Units)}$$

$$R_E = (8.57\times10^{-3})QrvC_3 \text{ (English Units)}$$

where:

$R_E$ = particulate emission rate, kg/hr (English units: lb/hr).

$60\times10^{-6}$ = metric units conversion factor, min-kg/hr-mg.

$8.57\times10^{-3}$ = English units conversion factor, min-lb/hr-gr.

Qrv = volumetric flow rate of gases discharged into the atmosphere from the fluid catalytic cracking unit catalyst regenerator following the emission control system, as determined by Method 2, dscm/min (English units: dscf/min).

$C_3$ = particulate emission concentration discharged into the atmosphere, as determined by Method 5, mg/dscm (English units: gr/dscf).

(vi) For each run, emissions expressed in kg (English units: lb/1000 lb) of coke burn-off in the catalyst regenerator shall be determined by the following equation:

$$R_s = 1000\frac{R_E}{R_c} \text{ (Metric or English Units)}$$

where:

$R_s$ = particulate emission rate, kg/100 kg (English units: lb/1000 lb) of coke burn-off in the fluid catalytic cracking unit catalyst regenerator.

1000 = conversion factor, kg to 1000 kg (English units: lb to 1000 lb).

$R_E$ = particulate emission rate, kg/hr (English units: lb/hr).

$R_C$ = coke burn-off rate, kg/hr (English units: lb/hr).

(vii) In those instances in which auxiliary liquid or solid fossil fuels are burned in an incinerator-waste heat boiler, the rate of particulate matter emissions permitted under division (3)(b) of this subsection must be determined. Auxiliary fuel heat input, expressed in millions of cal/hr (English units: Millions of BTU/hr) shall be calculated for each run by fuel flow rate measurement and analysis of the liquid or solid auxiliary fossil fuels. For each run, the rate of particulate emissions permitted under division (3)(b) of this subsection shall be calculated from the following equation:

$$R_S = 1.0 + \frac{0.18\ H}{R_C} \quad \text{(Metric Units)}$$

$$R_S = 1.0 + \frac{0.10\ H}{R_C} \quad \text{(English Units)}$$

where:

$R_S$ = allowable particulate emission rate, kg/100 kg (English units: lb/1000 lb) of coke-burn-off in the fluid catalytic cracking unit catalyst regenerator.

1.0 = emission standard, 1.0 kg/1000 kg (English units: 1.0 lb/1000 lb) of coke burn-off in the fluid catalytic cracking unit regenerator.

0.18 = Metric units maximum allowable incremental rate of particulate emissions, g/million cal.

0.10 = English units maximum allowable incremental rate of particulate emissions, lb/million BTU.

H = heat input from solid or liquid fossil fuel, million cal/hr (English units: million BTU/hr).

$R_c$ = coke burn-off rate, kg/hr (English units: lb/hr.

(b) For the purpose of determining compliance with division (4) of this subsection, the integrated sample technique of Method 10 shall be used. The sample shall be extracted at a rate proportional to the gas velocity at a sampling point near the centroid of the duct. The sampling time shall not be less than 60 minutes.

(c) For the purpose of determining compliance with division (5)(a) of this subsection, Method 11 shall be used. When refinery fuel gas lines are operating at pressures substantially above atmospheric, the gases sampled must be introduced into the sampling train at approximately atmospheric pressure. This may be accomplished with a flow control valve. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line. The minimum sampling time shall be 10 minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples shall constitute one run. Samples shall be taken at approximately 1-hour intervals. For most fuel gases, sample times exceeding 20 minutes may result in depletion of the collecting solution, although fuel gases containing low concentrations of hydrogen sulfide may necessitate sampling for longer periods of time.

(d) Method 6 shall be used for determining concentration of $SO_2$ in determining compliance with division (5)(b) of this subsection except that $H_2S$ concentration of the fuel gas may be determined instead. Method 1 shall be used for velocity traverses and Method 2 for determining velocity and volumetric flow rate. The sampling site for determining $SO_2$ concentration by Method 6 shall be the same as for determining volumetric flow rate by Method 2. The sampling point in the duct for determining $SO_2$ concentration by Method 6 shall be at the centroid of the cross section if the cross sectional area is less than 5 $m^2$ (54 $ft^2$) or at a point no closer to the walls than

1m (39 inches) if the cross sectional area is 5 m or more and the centroid is more than one meter from the wall. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. The minimum sampling time shall be 10 minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples shall constitute on run. Samples shall be taken at approximately 1-hour intervals.

(51.16) 12.408 Standards of Performance for Storage Vessels for Petroleum Liquids

(1) Applicability and Designation of Affected Facility

(a) Except as provided in division (1)(b) of this subsection, the affected facility to which this subsection applies is each storage vessel for petroleum liquids which has a storage capacity greater than 151,412 liters (40,000 gallons).

(b) This subsection does not apply to storage vessels for petroleum or condensate stored, processed, and/or treated at a drilling and production facility prior to custody transfer.

(2) Definitions

As used in this section, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Storage vessel" means any tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

(i) Pressure vessels which are designed to operate in excess of 15 pounds per square inch gauge without emissions to the atmosphere except under emergency conditions.

(ii) Subsurface caverns or porous rock reservoirs, or

(iii) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(b) "Petroleum liquids" means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Number 2 through Number 6 fuel oils as specified in A.S.T.M. D39669, gas turbine fuels oils Numbers 2-GT through 4-GT as specified in A.S.T.M. D2880-71, or diesel fuel oils Numbers 2-D and 4-D as specified in A.S.T.M. D975-68.

(c) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through distillation of petroleum or through distillation of petroleum or through redistillation, cracking, or reforming of unfinished petroleum derivatives.

(d) "Petroleum" means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(e) "Hydrocarbon" means any organic compound consisting predominantly of carbon and hydrogen.

(f) "Condensate" means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

(g) "Custody transfer" means the transfer of produced petroleum and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

(h) "Drilling and production facility" means all drilling and servicing equipment, wells, flow lines, separators, equipment, gathering lines, and auxiliary non-transportation-related equipment used in the production of petroleum but does not include natural gasoline plants.

(i) "True vapor pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss from Floating Roof Tanks, 1962.

(j) "Floating roof" means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the petroleum liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

(k) "Vapor recovery system" means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from the storage vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

(l) "Reid vapor pressure" is the absolute vapor pressure of volatile crude oil and volatile non-viscous petroleum liquids, except liquefied petroleum gases, as determined by ASTM-D-323-58 (reapproved 1968).

(3) Standard for Hydrocarbons

The owner or operator of any storage vessel to which this subsection applies shall store petroleum liquids as follows:

(a) If the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 78 mm Hg. (1.5 psia) but not greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.

(b) If the true vapor pressure of the petroleum liquid as stored is greater than 570 mm hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

(4) Monitoring of Operations

(a) The owner or operator of any storage vessel to which this subsection applies shall for each such storage vessel maintain a file of each type of petroleum liquid stored, of the typical Reid vapor pressure of each type of petroleum liquid stored, and of the dates of storage. Dates on which the storage vessel is empty shall be shown.

(b) The owner or operator of any storage vessel to which this subsection applies shall for each such storage vessel determine and record the average monthly storage temperature and true vapor pressure of the petroleum liquid stored at such temperature if:

(i) The petroleum liquid has a true vapor pressure, as stored, greater than 26 mm Hg (0.5 psia) but less than 78 mm Hg (1.5 psia) and is stored in a storage vessel other than one equipped with a floating roof, a vapor recovery system or their equivalents; or

(ii) The petroleum liquid has a true vapor pressure, as stored, greater than 470 mm Hg (9.1 psia) and is stored in a storage vessel other than one equipped with a vapor recovery system or its equivalent.

(c) The average monthly storage temperature is an arithmetic average calculated for each calendar month, or portion thereof if storage is for less than a month, from bulk liquid storage temperatures determined at least once every 7 days.

(d) The true vapor pressure shall be determined by the procedures in American Petroleum Institute (API) Bulletin 2517. This procedure is dependent upon determination of the storage temperature and the Reid vapor pressure, which requires sampling of the petroleum liquids in the storage vessels. Unless the Department requires in specific cases that the stored petroleum liquid be sampled, the true vapor pressure may be determined by using the average monthly storage temperature and the typical Reid vapor pressure. For those liquids for which certified specifications limiting the Reid vapor pressure exist, that Reid vapor pressure may be used. For other liquids, supporting analytical data must be made available on request to the Department when typical Reid vapor pressure is used.

(51.17) 12.409 Standards of Performance for Secondary Lead Smelters

(1) Applicability and Designation of Affected Facility

The provisions of this subsection are applicable to the following affected facilities in secondary lead smelters: Pot furnaces of more than 250 kg (550 lb) charging capacity, blast (cupola) furnaces, and reverberatory furnaces.

(2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Reverberatory furnace" includes the following types of reverberatory furnaces: stationary, rotating, rocking, and tilting.

(b) "Secondary lead smelter" means any facility producing lead from a lead-bearing scrap material by smelting to the metallic form.

(c) "Lead" means elemental lead or alloys in which the predominant component is lead.

(3) Standard for Particulate Matter

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall discharge or cause the discharge into the atmosphere from a blast (cupola) or reverberatory furnace any gases which:

(i) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(ii) Exhibit 20 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from any pot furnace any gases which exhibit 10 percent opacity or greater.

(4) Test Methods and Procedures

(a) The reference methods appended to this regulation, except as provided for in subsection 12.107(2) shall be used to determine compliance with the standards prescribed in division (3) of this subsection as follows:

(i) Method 5 for the concentration of particulate matter and the associated moisture content,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(b) For Method 5, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the Department. Particulate sampling shall be conducted during representative periods of furnace operation, including charging and tapping.

## (51.17) 12.410 Standards of Performance for Secondary Brass and Bronze Ingot Production Plants

### (1) Applicability and Designation of Affected Facility

The provisions of this subsection are applicable to the following affected facilities in secondary brass or bronze ingot production plants; Reverberatory and electric furnaces of 1,000 kg (2,205 lb) or greater production capacity and blast (cupola) furnaces of 250 kg/hr (550 lb/hr) or greater production capacity.

### (2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Brass or bronze" means any metal alloy containing copper as its predominant constituent, and lesser amounts of zinc, tin, lead, or other metals.

(b) "Reverberatory furnace" includes the following types of reverberatory furnaces: stationary, rotating, rocking, and tilting.

(c) "Electric furnace" means any furnace which uses electricity to produce over 50 percent of the heat required in the production of refined brass or bronze.

(d) "Blast furnace" means any furnace used to recover metal from slag.

(3) Standard for Particulate Matter

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall discharge or cause the discharge into the atmosphere from a reverberatory furnace any gases which:

(i) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(ii) Exhibit 20 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall discharge or cause the discharge into the atmosphere from any blast (cupola) or electric furnace any gases which exhibit 10 percent opacity or greater.

(4) Test Methods and Procedures

(a) The reference methods appended to this part, except as provided for in subsection 12.107(2), shall be used to determine compliance with the standards prescribed in division (3) of this subsection as follows:

(i) Method 5 for the concentration of particulate matter and the associated moisture content,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(b) For Method 5, the sampling time for each run shall be at least 120 minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the Department. Particulate matter sampling shall be conducted during representative periods of charging and refining, but not during pouring of the heat.

(51.4) 12.411 Standards of Performance for Iron and Steel Plants

(1) Applicability and Designation of Affected Facility

The affected facility to which the provisions of this subsection apply is each basic oxygen process furnace.

(2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Basic oxygen process furnace" (BOPF) means any furnace producing steel by charging scrap steel, hot metal, and flux materials into a vessel and introducing a high volume of an oxygen-rich gas.

(b) "Steel production cycle" means the operations required to produce each batch of steel and includes the following major functions: Scrap charging, preheating (when used), hot metal charging, primary oxygen blowing, additional oxygen blowing (when used), and tapping.

(3) Standard for Particulate Matter

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall discharge or cause the discharge into the atmosphere from any affected facility any gases which:

(i) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(ii) (Reserved)

(4) (Reserved)

(5) Test Methods and Procedures

(a) The reference methods appended to this regulation, except as provided for in Section 12.107(2), shall be used to determine compliance with the standards prescribed in division (3) of this subsection as follows:

(i) Method 5 for concentration of particulate matter and associated moisture content,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 for volumetric flow rate, and

(iv) Method 3 for gas analysis.

(b) For Method 5, the sampling for each run shall continue for an integral number of cycles with total duration of at least 60 minutes. The sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the Department. A cycle shall start at the beginning of either the scrap preheat or the oxygen blow and shall terminate immediately prior to tapping.

(51.9) 12.412 Standards of Performance for Sewage Treatment Plants

(1) Applicability and Designation of Affected Facility

The affected facility to which the provisions of this subsection apply is each incinerator which burns the sludge produced by municipal sewage treatment facilities.

(2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(3) Standard for Particulate Matter

On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator of any sewage sludge incinerator subject to the provisions of this subsection shall discharge into the atmosphere of:

(a) Particulate matter at a rate in excess of 0.65 g/kg dry sludge input (1.30 lb/ton dry sludge input).

(b) Any gases which exhibit 20 percent opacity or greater.

(4) Monitoring of Operations

The owner or operator of any sludge incinerator subject to the provisions of this subsection shall:

(a) Install, calibrate, maintain, and operate a flow measuring device which can be used to determine either the mass or volume of sludge charged to the incinerator. The flow measuring device shall have an accuracy of ±5 percent over its operating range.

(b) Provide access to the sludge charged so that a well-mixed representative grab sample of the sludge can be obtained.

(5) Test Methods and Procedures

(a) The reference methods appended to this regulation, except as provided for in subsection 12.107(2), shall be used to determine compliance with the standards prescribed in division (3) of this subsection as follows:

(i) Method 5 for concentration of particulate matter and associated moisture content,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 for volumetric flow rate, and

(iv) Method 3 for gas analysis.

(b) For Method 5, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.015 dscm/min (0.53 dscf/min), except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the Department.

(c) Dry sludge charging rate shall be determined as follows:

(i) Determine the mass ($S_m$) or volume ($S_v$) of sludge charged to the incinerator during each run using a flow measuring device meeting the requirements of division (4)(a)(i) of this subsection. If total input during a run is measured by a flow measuring device, such readings shall be used. Otherwise, record the flow measuring device readings at 5-minute intervals during a run.

Determine the quantity charged during each interval by averaging the flow rates at the beginning and end of the interval and then multiplying the average for each interval by the time for each interval. Then add the quantity for each interval to determine the total quantity charged during the entire run, ($S_m$) or ($S_v$).

(ii) Collect samples of the sludge charged to the incinerator in non-porous collecting jars at the beginning of each run and at approximately 1-hour intervals thereafter until the test ends, and determine for each sample the dry sludge content (total solids residue) in accordance with "224 G. Method for Solid and Semisolid Samples," Standard Methods for the Examination of Water and Wastewater, Thirteenth Edition, American Public Health Association, Inc., New York, N.Y., 1971, pp.539-41, except that:

((a)) Evaporating dishes shall be ignited to at least 103°C rather than the 550°C specified in step 3(a)(1).

((b)) Determination of volatile residue, step 3(b) may be deleted.

((c)) The quantity of dry sludge per unit sludge charged shall be determined in terms of either $R_{dv}$ (metric units: mg dry sludge/liter sludge charged or English units: $lb/ft^3$) or $R_{dm}$ (metric units: mg dry sludge/mg sludge charged or English units: lb/lb).

(iii) Determine the quantity of dry sludge per unit sludge charged in terms of either $R_{dv}$ or $R_{dm}$.

((a)) If the volume of sludge charged is used:

$$S_d = (60\times10^{-3}) \frac{R_{dv}S_v}{T} \quad \text{(Metric Units)}$$

or

$$S_d = (8.021) \frac{R_{dv}S_v}{T} \quad \text{(English Units)}$$

where:

$S_d$ = average dry sludge charging rate during the run, kg/hr (English units: lb/hr).

$R_{dv}$ = average quantity of dry sludge per unit volume of sludge charged to the incinerator, mg/l (English units: $lb/ft^3$).

$S_v$ = sludge charged to the incinerator during the run, $m^3$ (English units: gal).

T = duration of run, min (English units: min).

$60x10^{-3}$ = metric units conversion factor, l-kg-min/$m^3$-mg-hr.

8.021 = English units conversion factor, $ft^3$-min/gal-hr.

((b)) If the mass of sludge charged is used:

$$S_d = (60)\,\frac{R_{dm}S_m}{T} \text{ (Metric or English Units)}$$

where:

$S_d$ = average dry sludge charging rate during the run, kg/hr (English units: lb/hr).

$R_{dm}$ = average ratio of quantity of dry sludge to quantity of sludge charged to the incinerator mg/mg (English units: lb/lb).

$S_m$ = sludge charged during the run, kg (English units: lb).

T = duration of run, min (Metric or English units).

60 = conversion factor, min/hr (Metric or English units).

(d) Particulate emission rate shall be determined by:

$C_{aw} = C_sQ_s$ (Metric or English Units)

where:

$C_{aw}$ = particulate matter mass emissions, mg/hr (English units: lb/hr).

$C_s$ = particulate matter concentration, $mg/m^3$ (English units; lb/dscf).

$Q_s$ = volumetric stack gas flow rate, dscm/hr (English units: dscf/hr). $Q_s$ and $C_s$ shall be determined using Methods 2 and 5, respectively.

(e) Compliance with 12.412(3) shall be determined as follows:

$$C_{ds} = (10^{-3}) \frac{C_{aw}}{S_d} \text{ (Metric Units)}$$

or

$$C_{ds} = (2000) \frac{C_{aw}}{S_d} \text{ (English Units)}$$

where:

$C_{ds}$ = particulate emission discharge, g/kg dry sludge (English units: lb/ton dry sludge).

$10^{-3}$= Metric conversion factor, g/mg.

2000= English conversion factor, lb/ton.

12.413 - 12.416 (Reserved)

(51.21) 12.417 Standards of Performance for the Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants

(1) Applicability and Designation of Affected Facility

The affected facility to which the provisions of this subsection apply is each wet-process phosphoric acid plant. For the purpose of this subsection, the affected facility includes any combination of: reactors, filters, evaporators, and hotwells.

(2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Wet-process phosphoric acid plant" means any facility manufacturing phosphoric acid by reacting phosphate rock and acid.

(b) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in subsection 12.417(5), or equivalent or alternative methods.

(c) "Equivalent $P_2O_5$ feed" means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

(3) Standard for Fluoride

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility and gases which contain total fluorides in excess of 10.0 g/metric ton of equivalent $P_2O_5$ feed (0.020 lb/ton).

(4) Monitoring of Operations

(a) The owner or operator of any wet-process phosphoric acid plant subject to the provisions of this subsection shall install, calibrate, maintain, and operate a monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The monitoring device shal- have an accuracy of ± 5 percent over its operating range.

(b) The owner or operator of any wet-process phosphoric acid plant shall maintain a daily record of equivalent $P_2O_5$ feed by first determining the total mass rate in metric ton/hr of phosphorus-bearing feed using a monitoring device for measuring mass flow rate which meets the requirements of subdivision (a) of this division and then by proceeding according to subsection 12.417(5)(d)(ii).

(c) The owner or operator of any wet-process phosphoric acid subject to the provisions of this subsection shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

(5) Test Methods and Procedures

(a) Reference methods in Appendix A of this regulation, except as provided in subsection 12.107(2), shall be used to determine compliance with the standard prescribed in subsection 12.417(3) as follows:

(i) Method 13A or 13B for the concentration of total fluorides and the associated moisture content,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(b) For Method 13A or 13B, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be 0.85 dscm (30 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Department.

(c) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(d) Equivalent $P_2O_5$ feed shall be determined as follows:

(i) Determine the total mass rate in metric ton/hr of phosphorus-bearing feed during each run using a flow monitoring device meeting the requirements of subsection 12.417(4)(a).

(ii) Calculate the equivalent $P_2O_5$ feed by multiplying the percentage $P_2O_5$ content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9), times the total mass rate of phosphorus-bearing feed. AOAC Method 9 is published in the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12. Other methods may be approved by the Department.

(e) For each run, emissions expressed in g/metric ton of equivalent $P_2O_5$ feed shall be determined using the following equation:

$$E = \frac{(C_2Q_3)\ 10^{-3}}{M_{P_2O_5}}$$

where:

$E$ = Emissions of total fluorides in g/metric ton of equivalent $P_2O_5$ feed.

$C_2$ = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B.

$Q_3$ = Volumetric flow rate of the effluent gas stream in dscm/hr as determined by Method 2.

$10^{-3}$ = Conversion factor for mg to g.

$M_{P_2O_5}$ = Equivalent $P_2O_5$ feed in metric ton/hr as determined by subsection 12.417(5)(d).

(51.21) 12.418 Standards of Performance for the Phosphate Fertilizer Industry: Super-phosphoric Acid Plants

(1) Applicability and Designation of Affected Facility

The affected facility to which the provisions of this subsection apply is each superphosphoric acid plant. For the purpose of this subsection, the affected facility includes any combination of: evaporators, hotwells, acid pumps, and cooling tanks.

(2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Superphosphoric acid plant" means any facility which concentrates wet-process phosphoric acid to 66 percent or greater $P_2O_5$ content by weight for eventual consumption as a fertilizer.

(b) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in subsection 12.418(5), or equivalent or alternative methods.

(c) "Equivalent $P_2O_5$ feed" means the quantity of phosphorus, expressed as phosphorous pentoxide, fed to the process.

(3) Standard for Fluorides

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 5.0 g/metric ton of equivalent $P_2O_5$ feed (0.010 lb/ton).

(4) Monitoring of Operations

(a) The owner or operator of any superphosphoric acid plant subject to the provisions of this subsection shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ±5 percent over its operating range.

(b) The owner or operator of any superphosphoric acid plant shall maintain a daily record of equivalent $P_2O_5$ feed by first determining the total mass rate in metric ton/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of subdivision (a) of this division and then by proceeding according to subsection 12.418(5)(d)(ii).

(c) The owner or operator of any superphosphoric acid plant subject to the provisions of this subsection shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

(5) Test Methods and Procedures

(a) Reference methods in Appendix A of this regulation, except as provided in subsection 12.107(2), shall be used to determine compliance with the standard prescribed in subsection 12.418(3) as follows:

(i) Method 13A or 13B for the concentration of total fluorides and the associated moisture content,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(b) For Method 13A or 13B, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be at least 0.85 dscm (30 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors may be approved by the Department.

(c) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(d) Equivalent $P_2O_5$ feed shall be determined as follows:

(i) Determine the total mass rate in metric ton/hr of phosphorus-bearing feed during each run using a flow monitoring device meeting the requirements of subsection 12.418(4)(a).

(ii) Calculate the equivalent $P_2O_5$ feed by multiplying the percentage $P_2O_5$ content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9), times the total mass rate of phosphorus-bearing feed. (AOAC Method 9) is published in the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12. Other methods may be approved by the Department.

(e) For each run, emissions expressed in g/metric ton of equivalent $P_2O_5$ feed, shall be determined using the following equation:

$$E = \frac{(C_2Q_3)\ 10^{-3}}{M_{P_2O_5}}$$

where:

E = Emissions of total fluorides in g/metric ton E of equivalent $P_2O_5$ feed.

$C_3$ = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B.

$Q_3$ = Volumetric flow rate of the effluent gas stream in dscm/hr as determined by Method 2.

$10^{-3}$ = Conversion factor for mg to g.

$M_{P_2O_5}$ = Equivalent $P_2O_5$ feed in metric ton/hr as determined by subsection 12.418.

## (51.21) 12.419 Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants

(1) Applicability and Designation of Affected Facility

The affected facility to which the provisions of this subsection apply is each granular diammonium phosphate plant. For the purpose of this subsection, the affected facility includes any combination of: reactors, granulators, dryers, coolers, screens and mills.

(2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Granular diammonium phosphate plant" means any plant manufacturing granular diammonium phosphate by reacting phosphoric acid with ammonia.

(b) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in subsection 12.419(5) or equivalent or alternative methods.

(c) "Equivalent $P_2O_5$ feed" means the quantity of phosphorus, expressed as phosphorous pentoxide, fed to the process.

(3) Standard for Fluorides

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 30 g/metric ton of equivalent $P_2O_5$ feed (0.060 lb/ton).

(4) Monitoring of Operations

(a) The owner or operator of any granular diammonium phosphate plant subject to the provisions of this subsection shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ±5 percent over its operating range.

(b) The owner or operator of any granular diammonium phosphate plant shall maintain a daily record of equivalent $P_2O_5$ feed by first determining the total mass rate in metric ton/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of subdivision (a) of this division and then by proceeding according to subsection 12.419(5)(d)(ii).

(c) The owner or operator of any granular diammonium phosphate plant subject to the provisions of this subsection shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

(5) Test Methods and Procedures

(a) Reference methods in Appendix A of this regulation, except as provided for in subsection 12.107(2), shall be used to determine compliance with the standard prescribed in subsection 12.419(3) as follows:

(i) Method 13A or 13B for the concentration of total fluorides and the associated moisture content,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(b) For Method 13A or 13B, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be at least 0.85 dscm (30 dscf) except that shorter sampling times or smaller volumes when necessitated by process variables or other factors, may be approved by the Department.

(c) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(d) Equivalent $P_2O_5$ feed shall be determined as follows:

(i) Determine the total mass rate in metric ton/hr of phosphorus-bearing feed during each run using a flow monitoring device meeting the requirements of subsection 12.419(4)(a).

(ii) Calculate the equivalent $P_2O_5$ feed by multiplying the percentage $P_2O_5$ content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9, times the total mass rate of phosphorus-bearing feed. AOAC Method 9 is published in the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12. Other methods may be approved by the Department.

(e) For each run, emissions expressed in g/metric ton of equivalent $P_2O_5$ feed shall be determined using the following equation:

$$E = \frac{(C_2 Q_3)\ 10^{-3}}{M_{P_2O_5}}$$

where:

$E$ = Emissions of total fluorides in g/metric ton of equivalent $P_2O_5$.

$C_2$ = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B.

$Q_3$ = Volumetric flow rate of the effluent gas stream in dscm/hr as determined by Method 2.

$10^{-3}$ = Conversion factor for mg to g.

$M_{P_2O_5}$ = Equivalent $P_2O_5$ feed in metric ton/hr as determined by subsection 12.419(5)(d).

(51.21) 12.420 Standards of Performance for the Phosphate Fertilizer Industry: Triple Superphosphate Plants

(1) Applicability and Designation of Affected Facility

The affected facility to which the provisions of this subsection apply is each triple superphosphate plant. For the purpose of this subsection, the affected facility includes any combination of: mixers, curing belts (dens), reactors, granulators, dryers, cookers, screens, mills, and facilities which store run-of-pile triple superphosphate.

(2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Triple superphosphate plant" means any facility manufacturing triple superphosphate by reacting phosphate rock with phosphoric acid. A run-of-pile triple superphosphate plant includes curing and storing.

(b) "Run-of-pile triple superphosphate" means any triple superphosphate that has not been processed in a granulator and is composed of particles at least 25 percent by weight of which (when not caked) will pass through a 16 mesh screen.

(c) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in subsection 12.420(5), or equivalent or alternative methods.

(d) "Equivalent $P_2O_5$ feed" means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

(3) Standard for Fluorides

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 100 g/metric ton of equivalent $P_2O_5$ feed (0.20 lb/ton).

(4) Monitoring of Operations

(a) The owner or operator of any triple superphosphate plant subject to the provisions of this subsection shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ±5 percent over its operating range.

(b) The owner or operator of any triple superphosphate plant shall maintain a daily record of equivalent $P_2O_5$ feed by first determining the total mass rate in metric ton/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of subdivision (a) of this division and then by proceeding according to subsection 12.420(5)(d)(ii).

(c) The owner or operator of any triple superphosphate plant subject to the provisions of this subsection shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of +5 percent over its operating range.

(5) Test Methods and Procedures

(a) Reference methods in Appendix A of this regulation, except as provided for in subsection 12.107(2), shall be used to determine compliance with the standard prescribed in subsection 12.420(3) as follows:

(i) Method 13A or 13B for the concentration of total fluorides and the associated moisture content,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(b) For Method 13A or 13B, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be at least 0.85 dscm (30 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Department.

(c) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(d) Equivalent $P_2O_5$ feed shall be determined as follows:

(i) Determine the total mass rate in metric ton/hr of phosphorus-bearing feed during each run using a flow minitoring device meeting the requirements of subsection 12.420(4)(a).

(ii) Calculate the equivalent $P_2O_5$ feed by multiplying the percentage $P_2O_5$ content, as measured by the spectrophotometric molybdovadophosphate method (AOAC Method 9), times the total mass rate of phosphorus-bearing feed. AOAC Method 9 is published in the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp.11-12. Other methods may be approved by the Department.

(e) For each run, emissions expressed in g/metric ton of equivalent P O feed shall be determined using the following equation:

$$E = \frac{(C_2Q_3)\ 10^{-3}}{M_{P_2O_5}}$$

where:

$E$ = Emissions of total fluorides in g/metric ton of equivalent $P_2O_5$ feed.

$C_2$ = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B.

$Q_3$ = Volumetric flow rate of the effluent gas stream in dscm/hr as determined by Method 2.

$10^{-3}$ = Conversion factor for mg to g.

$M_{P_2O_5}$ = Equivalent $P_2O_5$ feed in metric ton/hr as determined by subsection 12.420(5)(d).

(51.21) 12.421 Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities

(1) Applicability and Designation of Affected Facility

The affected facility to which the provisions of this subsection apply is each granular triple superphosphate storage facility. For the purpose of this subsection, the affected facility includes any combination of: storage or curing piles, conveyors, elevators, screens and mills.

(2) As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Granular triple superphosphate storage facility" means any facility curing or storing granular triple superphosphate.

(b) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in subsection 12.421(5), or equivalent or alternative methods.

(c) "Equivalent $P_2O_5$ stored" means the quantity of phosphorus, expressed as phosphorus pentoxide, being cured or stored in the affected facility.

(d) "Fresh granular triple superphosphate" means granular triple superphosphate produced no more than 10 days prior to the date of the performance test.

(3) Standard for Fluorides

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 0.25 g/hr/metric ton of equivalent $P_2O_5$ stored ($5.0 \times 10^{-4}$ lb/hr/ton of equivalent $P_2O_5$ stored).

(4) Monitoring of Operations

(a) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this subsection shall maintain an accurate account of triple superphosphate in storage to permit the determination of the amount of equivalent $P_2O_5$ stored.

(b) The owner of operator of any granular triple superphosphate storage facility shall maintain a daily record of total equivalent $P_2O_5$ stored by multiplying the percentage $P_2O_5$ content, as determined by subsection 12.421(5)(f)(ii), times the total mass of granular triple superphosphate stored.

(c) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this subsection shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

(5) Test Methods and Procedures

(a) Reference methods in Appendix A of this regulation, except as provided for in subsection 12.107(2), shall be used to determine compliance with the standard prescribed in subsection 12.421(3) as follows:

(i) Method 13A or 13B for the concentration of total fluorides and the associated moisture content,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(b) For Method 13A or 13B, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be at least 0.85 dscm (30 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Department.

(c) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(d) Except as provided under subdivision (e) of this division, all performance tests on granular triple superphosphate storage facilities shall be conducted only when the following quantities of product are being cured or stored in the facility.

(i) Total granular triple superphosphate - at least 10 percent of the building capacity.

(ii) Fresh granular triple superphosphate - at least 20 percent of the amount of triple superphosphate in the building.

(e) If the provisions set forth in subdivision (d)(2) of this division exceed production capabilities for fresh granular triple superphosphate, the owner or operator shall have at least five days maximum production of fresh granular triple superphosphate in the building during a performance test.

(f) Equivalent $P_2O_5$ stored shall be determined as follows:

(i) Determine the total mass stored during each run using an accountability system meeting the requirements of subsection 12.421(4)(a).

(ii) Calculate the equivalent $P_2O_5$ stored by multiplying the percentage P 0 content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9), times the total mass stored. AOAC Method 9 is published in the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12. Other methods may be approved by the Department.

(g) For each run, emissions expressed in g/hr/metric ton of equivalent $P_2O_5$ stored shall be determined using the following equation:

$$E = \frac{(C_2Q_3)\ 10^{-3}}{M_{P_2O_5}}$$

where:

E = Emissions of total fluorides in g/hr/metric of equivalent $P_2O_5$ stored.

$C_2$ = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B.

$Q_3$ = Volumetric flow rate of the effluent gas stream in dscm/hr as determined by Method 2.

$10^{-3}$ = Conversion factor for mg to g.

$M_{P_2o5}$ = Equivalent $P_2O_5$ feed in metric tons as measured by subsection 12.421(5)(d).

12.422 - 12.423 (Reserved)

## (51.4) 12.424 Standards of Performance for Steel Plants: Electric Arc Furnaces

### (1) Applicability and Designation of Affected Facility

The provisions of this subsection are applicable to the following affected facilities in steel plants: electric arc furnaces and dust-handling equipment.

### (2) Definitions

As used in this subsection, all terms not defined herein shall have the meaning given them in the Act and in subsection 12.102 of this regulation.

(a) "Electric arc furnace" (EAF) means any furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. Furnaces from which the molten steel is cast into the shape of finished products, such as in a foundry, are not affected facilities included within the scope of this definition. Furnaces which, as the primary source of iron, continuously feed pre-reduced ore pellets are not affected facilities within the scope of this definition.

(b) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the control device and located at or near the control device for an EAF subject to this subsection.

(c) "Control device" means the air pollution control equipment used to remove particulate matter generated by an EAF(s) from the effluent gas stream.

(d) "Capture system" means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by an EAF to the air pollution control device.

(e) "Charge" means the addition of iron and steel scrap or other materials into the top of an electric arc furnace.

(f) "Charging period" means the time period commencing at the moment an EAF starts to open and ending either three minutes after the EAF roof is returned to its closed position or six minutes which commencement of opening of the roof, whichever is longer.

(g) "Tap" means the pouring of molten steel from an EAF.

(h) "Tapping period" means the time period commencing at the moment an EAF begins to tilt to pour and ending either three minutes after an EAF returns to an upright position or six minutes after commencing to tilt, whichever is longer.

(i) "Meltdown and refining" means that phase of the steel production cycle when charge material is melted and undesirable elements are removed from the metal.

(j) "Meltdown and refining period" means the time period commencing at the termination of the initial charging period and ending at the initiation of the tapping period, excluding any intermediate charging periods.

(k) "Shop opacity" means the arithmetic average of 24 or more opacity observations of emissions from the shop taken in accordance with Method 9 of Appendix A to this regulation for the applicable time periods.

(l) "Heat time" means the period commencing when scrap is charged to an empty EAF and terminating when the EAF tap is completed.

(m) "Shop" means the building which houses one or more EAF's.

(n) "Direct shell evacuation system" means any system that maintains a negative pressure within the EAF above the slag or metal and ducts these emissions to the control device.

(3) Standard for Particulate Matter

(a) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from an electric arc furnace any gases which:

(i) Exit from a control device and contain particulate matter in excess of 12 mg/dscm (0.0052 gr/dscf).

(ii) Exit from a control device and exhibit three percent opacity or greater.

(iii) Exit from a shop and, due solely to operation of any EAF(s), exhibit greater than zero percent shop opacity except:

((a)) Shop opacity greater than zero percent, but less than 20 percent, may occur during charging periods.

((b)) Shop opacity greater than zero percent, but less than 40 percent, may occur during tapping periods.

((c)) Opacity standards under subdivision (a)(iii) of this division shall apply only during periods when flow rates and pressures are being established under 12.424(5)(c) and (f).

((d)) Where the capture system is operated such that the roof of the shop is closed during the charge and the tap, and emissions to the atmosphere are prevented until the roof is opened after completion of the charge or tap, the shop opacity standards under subdivision (a)(iii) of the division shall apply when the roof is opened and shall continue to apply for the length of time defined by the charging and/or tapping periods.

(b) On and after the date on which the performance test required to be conducted by subsection 12.107 is completed, no owner or operator subject to the provisions of this subsection shall cause to be discharged into the atmosphere from dust-handling equipment any gases which exhibit 10 percent opacity or greater.

(4) Emission Monitoring

(a) A continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) shall be installed, calibrated, maintained, and operated by the owner or operator subject to the provisions of this subsection.

(b) For the purpose of reports under subsection 12.106(3), periods of excess emissions that shall be reported are defined as all six-minute periods during which the average opacity is three percent or greater.

(5) Monitoring of Operations

(a) The owner or operator subject to the provisions of this subsection shall maintain records daily of the following information:

(i) Time and duration of each charge;

(ii) Time and duration of each tap;

(iii) All flow rate data obtained under subdivision (b) of this division, or equivalent obtained under subdivision (d) of this division; and

(iv) All pressure data obtained under subdivision (e) of this division.

(b) Except as provided under subdivision (d) of this division, the owner or operator subject to the provisions of this subsection shall install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of ±10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The Department may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of Appendix A of this regulation.

(c) When the owner or operator of an EAF is required to demonstrate compliance with the standard under 12.424(3)(a)(iii) and at any other time the Department may require, the volumetric flow rate through each separately ducted hood shall be determined during all periods in which the hood is operated for the purpose of capturing emission from the EAF using the monitoring device under subdivision (b) of this division. The owner or operator may petition the Department for re-establishment of these flow rates whenever the owner or operator can demonstrate to the Department's satisfaction that the EAF operating conditions upon which the flow rates were previously established are no longer applicable. The flow rates determined during the most recent demonstration of compliance shall be maintained (or may be exceeded) at the appropriate level for each applicable period. Operation at lower flow rates may be considered by the Department to be unacceptable operation and maintenance of the affected facility.

(d) The owner or operator may petition and the Department to approve any alternative method that will provide a continuous record of operation of each emission capture system.

(e) Where emissions during any phase of the heat time are controlled by use of a direct shell evacuation system, the owner or operator shall install, calibrate, and maintain a monitoring device that continuously records the pressure in the free space inside the EAF. The pressure shall be recorded as 15-minute integrated averages. The monitoring device may be installed in any appropriate location in the EAF such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ±5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

(f) When the owner or operator of an EAF is required to demonstrate compliance with the standard under 12.424 (3)(a)(iii) and at any other time the Department may require, the pressure in the free space inside the furnace shall be determined during the meltdown and refining period(s) using the monitoring device under subdivision (e) of this division. The owner or operator may petition the Department for re-establishment of the 15-minute integrated average pressure whenever the owner or operator can demonstrate to the Department's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times the EAF is operating in a meltdown and refining period. Operation at higher pressures may be considered by the Department to be unacceptable operation and maintenance of the affected facility.

(g) Where the capture system is designed and operated such that all emissions are captured and ducted to a control device, the owner or operator shall not be subject to the requirements of this division.

(6) Test Methods and Procedures

(a) Reference methods in Appendix A of this regulation, except as provided under subsection 12.107(2), shall be used to determine compliance with the standards prescribed under subsection 12.424(3) as follows:

(i) Method 5 for concentration of particulate matter and associated moisture content;

(ii) Method 1 for sample and velocity traverses;

(iii) Method 2 for velocity and volumetric flow rate; and

(iv) Method 3 for gas analysis.

(b) For Method 5, the sampling time for each run shall be at least four hours. When a single EAF is sampled, the sampling time for each run shall also include an integral number of heats. Shorter sampling times, when necessitated by process variables or other factors, may be approved by the Department. The minimum sample volume shall be 4.5 dscm (160 dscf).

(c) For the purpose of this subsection, the owner or operator shall conduct the demonstration of compliance with subsection 12.424(3)(a)(iii) and furnish the Department a written report of the results of the test.

(d) During any performance test required under subsection 12.107 of this regulation, no gaseous dilutents may be added to the effluent gas stream after the fabric in any pressurized fabric filter collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(e) When more than one control device serves the EAF(s) being tested, the concentration of particulate matter shall be determined using the following equation:

$$C_3 = \frac{\sum_{n=1}^{N} (C_3Q_s)n}{\sum_{n=1}^{N} (Q_s)n}$$

where:

$C_3$ = Concentration of particulate matter mg/dscm (gr/dscf) as determined by Method 5.

N = Total number of control devices tested.

$Q_s$ = Volumetric flow rate of the effluent gas stream in dscm/hr (dscf/hr) as determined by Method 2.

$(C_3Q_s)n$ or $(Q_s)n$ = Value of the applicable parameter for each control device tested.

(f) Any control device subject to the provisions of this subsection shall be designed and constructed to allow measurement of emissions using applicable test methods and procedures.

(g) Where emissions from any EAF(s) combined with emissions from facilities not subject to the provisions of this subsection but controlled by a common capture system and control device, the owner or operator may use any of the following procedures during a performance test:

(i) Base compliance on control of combined emissions.

(ii) Utilize a method acceptable to the Department which compensates for the emissions from the facilities not subject to the provisions of this subsection.

(iii) Any combination of the criteria of subdivisions (g) and (g)(ii) of this division.

(h) Where emissions from any EAF(s) are combined with emissions from facilities not subject to the provisions of this subsection, the owner or operator may use any of the following procedures for demonstrating compliance with subsection 12.424(3)(a)(iii):

(i) Base compliance on control of the combined emissions.

(ii) Shutdown operation of facilities not subject to the provisions of this subsection.

(iii) Any combination of the criteria of subdivisions (h) (i) and (h) (ii) of this division.

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## APPENDIX A - REFERENCE METHODS

The reference methods specified within R23-25-12 are identical to those specified in Appendix A, as amended, of Title 40 Code of Federal Regulations, Part 60 (40 CFR 60). The methods, adopted by reference, are as follows:

Method 1 - Sample and Velocity Traverses for Stationary Sources

Method 2 - Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)

Method 3 - Gas Analysis for Carbon Dioxide, Excess Air, and Dry Molecular Weight

Method 4 - Determination of Moisture in Stack Gases

Method 5 - Determination of Particulate Emissions from Stationary Sources

Method 6 - Determination of Sulfur Dioxide Emissions from Stationary Sources

Method 7 - Determination of Nitrogen Oxide Emissions from Stationary Sources

Method 8 - Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources

Method 9 - Visual Determination of the Opacity of Emissions from Stationary Sources

Method 10 - Determination of Carbon Monoxide Emission from Stationary Sources

Method 11 - Determination of Hydrogen Sulfide Emissions from Stationary Sources

Method 12 - Reserved

Method 13A - Determination of Total Fluoride Emissions from Stationary Sources - SPADNS Zirconium Lake Method

Method 13B - Determination of Total Fluoride Emissions from Stationary Sources - Specific Ion Electrode Method

## APPENDIX B - PERFORMANCE SPECIFICATIONS

The performance specifications specified within R23-25-12 are identical to those specified in Appendix B, as amended, of Title 40 Code of Federal Regulations, Part 60 (40 CFR 60). The specifications, adopted by reference, are as follows:

Performance Specification 1 - Performance specifications and specification test procedures for transmissometer systems for continuous measurement of the opacity of stack emission.

Performance Specification 2 - Performance specifications and specification test procedures for monitors of $SO_2$ and $NO_x$ from stationary sources.

Performance Specification 3 - Performance specifications and specification test procedures for monitors of $CO_2$ and $O_2$ from stationary sources.

## R23-25-13 EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

### (2.0) 13.100 GENERAL PROVISIONS

### (2.0) 13.101 Applicability

The provisions of this regulation apply to the owner or operator of any stationary source for which a standard is prescribed under this regulation.

### (1.0) 13.102 Definitions

As used in this regulation, all terms not defined herein shall have the meaning given them in the Act or in subsection 1.040. Terms defined, both in this subsection and in subsection 1.040, shall have the meaning given them in this subsection:

(1) "Alternative method" means any method of sampling and analyzing for an air pollutant which is not a reference method or an equivalent method but which has been demonstrated to the Department's satisfaction to produce, in specific cases, results adequate for determination of compliance.

(2) "Commenced" means that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

(3) "Compliance schedule" means the date or dates by which a source or category of sources is required to comply with the standards of this regulation and with any steps toward such compliance which are set forth under subsection 13.109.

(4) "Construction" means fabrication, erection, or installation of a stationary source.

(5) "Effective date" is the date of promulgation in the North Dakota Air Pollution Control Regulations of an applicable standard or other limitation under this regulation.

(6) "Equivalent method" means any method of sampling and analyzing for an air pollutant which has been demonstrated to the Department's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

(7) "Existing souce" means any stationary source which is not a new source.

(8) "Modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any hazardous air pollutant emitted by such source or which results in the emission of any hazardous air pollutant not previously emitted, except that:

(a) Routine maintenance, repair, and replacement shall not be considered physical changes, and

(b) The following shall not be considered a change in the method of operation:

(i) An increase in the production rate, if such increase does not exceed the operating design capacity of the stationary source;

(ii) An increase in hours of operation.

(9) "New source" means any stationary source, the construction or modification of which is commenced after the effective date of this regulation.

(10) "Owner or operator" means any person who owns, leases, operates, controls, or supervises a stationary source.

(11) "Reference method" means any method of sampling and analyzing for an air pollutant, as described in Appendix B to this regulation.

(12) "Startup" means the setting in operation of a stationary source for any purpose.

(13) "Standard" means an emission standard for a hazardous air pollutant promulgated under this regulation.

(14) "Stationary source" means any building, structure, facility, or installation which emits or may emit any air pollutant which has been designated as hazardous by the Department.

(2.0) 13.103 Abbreviations

The abbreviations used in this part have the following meanings:

°C - Degrees Centigrade (Celsius)
cfm - Cubic feet per minute
$ft^2$ - Square feet

$ft^3$ - Cubic feet.
°F - Degrees Fahrenheit
in - Inch
l - Liter
ml - Milliliter ($10^{-3}$ liter)
m - Molar
$m^3$ - Cubic meter
nm - Nanometer ($10^{-9}$ meter)
oz - Ounce
v/v - Volume per volume
$yd^2$ - Square yard
w.g. - Water gage
in Hg - Inches of mercury
in $H_2O$ - Inches of water
g - Gram
mg - Milligram ($10^{-3}$ gram)
N - Normal
°R - Degree Rankine
min - Minute
sec. - Second
avg. - Average
I.D. - Inside diameter
O.D. - Outside diameter.
ug - Microgram ($10^{-6}$ gram)
% - Percent
Hg - Mercury
Be - Beryllium

## (2.0) 13.104 Prohibited Activities

(1) After the effective date of any standard prescribed under this regulation, no owner or operator shall construct or modify any stationary source subject to such standard without first obtaining a permit to construct from the Department, except under an exemption granted by the President under Section 112(c)(2) of the Federal Clean Air Act.

(2) After the effective date of any standard prescribed under this regulation, no owner or operator shall operate any new source in violation of such standard except under an exemption granted by the President under Section 112(c)(2) of the Federal Clean Air Act.

(3) Ninety days after the effective date of any standard prescribed under this regulation, no owner or operator shall operate any existing stationary source in violation of such standard, except under a permit to operate with an attached compliance schedule granted by the Department pursuant to subsection 13.108(2) or under an exemption granted by the President under Section 112(c)(2) of the Federal Clean Air Act.

(4) No owner or operator subject to the provisions of this regulation shall fail to report, revise reports, or report source test results as required under this regulation.

(2.0) 13.105 Determination of Construction or Modification

Upon written application by an owner or operator, the Department shall make a determination of whether actions taken or intended to be taken by such owner or operator constitute construction or modification or the commencement thereof within the meaning of this section. The Department will, within 30 days of receipt of sufficient information to evaluate an application, notify the owner or operator of its determination. Nothing in this subsection, nor any action taken pursuant to this subsection, shall prevent the Department from making such a determination upon its own initiative, nor prevent the Department from making any subsequent redetermination or taking any other action allowed by law.

(3.0) 13.106 Application for Permit to Construct

(1) The owner or operator of any new source to which a standard prescribed under this regulation is applicable shall, prior to the date on which construction or modification is planned to commence, apply for and receive a permit to construct as provided in Section 14.200 of these regulations.

(3.0) 13.107 Notification of Startup

(1) Any owner or operator of a source which has an initial startup date after the effective date of a standard prescribed under this regulation shall furnish the Department written notification as follows:

(a) A notification of the anticipated date of initial startup of the source not more than 60 days nor less than 30 days prior to such date.

(b) A notification of the actual date of initial startup of the source within 15 days after such date.

(3.0)
(13.0) 13.108 Source Reporting and Application for Permit to Operate

(1) The owner or operator of any existing source, or any new source to which a standard prescribed under this regulation is applicable which had an initial startup

date which preceded the effective date of a standard prescribed under this regulation, shall, within 90 days after the effective date, provide the following information in writing to the Department:

(a) Name and address of the owner or operator.

(b) The location of the source.

(c) The type of hazardous pollutants emitted by the stationary source.

(d) A brief description of the nature, size, design and method of operation of the stationary source including the operating design capacity of such source and identify each point of emission for each hazardous pollutant.

(e) The average weight per month of the hazardous materials being processed by the source, over the last 12 months preceding the date of the report.

(f) A description of the existing control equipment for each emission point, including:

  (i) Primary control device(s) for each hazardous pollutant.

  (ii) Secondary control device(s) for each hazardous pollutant.

  (iii) Estimated control efficiency (percent) for each control device.

(g) A statement by the owner or operator of the source as to whether he can comply with the standards prescribed in this regulation within 90 days of the effective date.

(2) The owner or operator of an existing source unable to operate in compliance with any standard prescribed under this regulation may request the Department to grant a permit to operate with an attached compliance schedule requiring compliance with the standard within 2 years of the effective date of such standard. Any request shall be in writing and shall include the following information:

(a) A description of the controls to be installed to comply with the standard.

(b) A compliance schedule, listing the date each step toward compliance will be reached. Such list shall include as a minimum the following dates:

(i) Date by which contracts for emission control systems or process modifications will be awarded, or date by which orders will be issued for the purchase of component parts to accomplish emission control or process modification;

(ii) Date of initiation of on-site construction or installation of emission control equipment or process change;

(iii) Date by which on-site construction or installation of emission control equipment or process modification is to be completed; and

(iv) Date by which final compliance is to be achieved.

(c) A description of interim emission control steps which will be taken during the compliance schedule period.

(3) Changes in the information provided under division (1) of this subsection shall be provided to the Department within 30 days after such change, except that if changes will result in modification of the source, the provisions of 13.106 are applicable.

(4) The format for reporting under this subsection is included as Appendix A to this regulation. Advice on reporting the status of compliance may be obtained from the Department.

(3.0)
(6.0)

### 13.109 Permit and Compliance Schedule

(1) Based on the information provided in any request under 13.108, or other information, the Department may grant a permit to operate with an attached compliance schedule not exceeding 2 years from the effective date of such standard.

(2) Such permit will be in writing and will, as a minimum:

(a) Identify the stationary source covered.

(b) Specify the date upon which the standard is to be met. The permit may be revoked or suspended if the standard is not met by the date specified or if the conditions specified under division (2)(c) of this subsection are not met.

(c) Specify dates by which steps toward compliance are to be taken; and impose such additional conditions as the Department determines to be necessary to assure installation of the necessary controls within the compliance schedule period, and to assure protection of the health of persons during such period.

(3) Prior to denying any request for a permit pursuant to this subsection, the Department will notify the owner or operator making such request of the Department's intention to issue such denial, together with:

(a) Notice of the information and findings on which such intended denial is based, and

(b) Notice of opportunity for such owner or operator to present, within such time limit as the Department specifies, additional information or arguments to the Department prior to final action on such request.

(4) A final determination to deny any request for a permit under this subsection will be in writing and will set forth the specific grounds on which such denial is based. Such final determination will be made within 60 days after presentation of additional information or arguments, or 60 days after the final date specified for such presentation, if no presentation is made.

(5) The granting of a permit under this subsection shall not abrogate the Department's authority under Sections 1.050, 14.209 and 14.306 of these regulations.

(9.0) 13.110 Emission Tests and Monitoring

(1) Emission tests and monitoring shall be conducted and reported as set forth in this regulation and Appendix B to this regulation.

(2) The owner or operator of a new source subject to this regulation, and otherwise at the request of the Department, the owner or operator of an existing source subject to this regulation, shall provide or cause to be provided, emission testing facilities as follows:

(a) Sampling ports adequate for test methods applicable to such source.

(b) Safe sampling platform(s).

(c) Safe access to sampling platform(s).

(d) Utilities for sampling and testing equipment.

(2.0)
(9.0) 13.111 Waiver of Emission Tests

(1) Emission tests may be waived upon written application to the Department if, in its judgment, the source is meeting the standard, or if the source is operating under a permit granted under subsection 13.109 or has requested such permit.

(2) If application for waiver of the emission test is made, such application shall accompany the information required by subsection 13.108. The appropriate form is contained in Appendix A to this regulation.

(3) Approval of any waiver granted pursuant to this subsection shall not abrogate the Department's authority under the Act or in any way prohibit the Department from later canceling such waiver. Such cancellation will be made only after notice is given to the owner or operator of the source.

(9.0) 13.112 Source Test and Analytical Methods

(1) Methods 101, 102, and 104 in Appendix B to this regulation shall be used for all source tests required under this regulation, unless an equivalent method or an alternative method has been approved by the Department.

(2) Method 103 in Appendix B to this regulation is hereby approved by the Department as an alternative method for sources subject to 13.303(1) and 13.403(2).

(3) The Department may, after notice to the owner or operator, withdraw approval of an alternative method granted under divisions (1), (2) or (4) of this subsection. Where the test results using an alternative method do not adequately indicate whether a source is in compliance with a standard, the Department may require the use of the reference method or its equivalent.

(4) Method 105 in Appendix B to this regulation is hereby approved by the Department as an alternative method for sources subject to 13.503(2).

### (14.0) 13.113 Availability of Information

(1) Emission data provided to, or otherwise obtained by, the Department in accordance with the provisions of this regulation shall be available to the public.

(2) Any records, reports, or information, other than emission data, provided to, or otherwise obtained by, the Department in accordance with the provisions of this regulation shall be available to the public, except that upon a showing satisfactory to the Department by any person that such records, reports, or information, or particular part thereof (other than emission data), if made public, would divulge methods or processes entitled to protection as trade secrets of such person, the Department will consider such records, reports, or information, or particular part thereof, confidential in accordance with the purposes of Section 1905 of Title 18 of the United States Code, except that such records, reports, or information, or particular part thereof, may be disclosed to other officers, employees, or authorized representatives of the State and Federal Government concerned with carrying out the provisions of the Act or when relevant in any proceeding under the Act.

### (2.0) 13.114 Circumvention

No owner or operator subject to the provisions of this regulation shall build, erect, install, or use any article, machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous dilutants to achieve compliance with a visible emissions standard, and the piecemeal carrying out of an operation to avoid coverage by a standard that applies only to operations larger than a specified size.

## (50.7) 13.200 EMISSION STANDARD FOR ASBESTOS

### (2.0) 13.201 Applicability

The provisions of this section are applicable to those sources specified in 13.203.

### (1.0) 13.202 Definitions

As used in this section, all terms not defined in this subsection shall have the meaning given them in the Act or in subsection 13.102.

(1) "Asbestos" means actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite.

(2) "Asbestos material" means asbestos or any material containing asbestos.

(3) "Particulate asbestos material" means finely divided particles of asbestos material.

(4) "Asbestos tailings" means any solid waste product of asbestos mining or milling operations which contains asbestos.

(5) "Outside air" means the air outside buildings and structures.

(6) "Visible emissions" means any emissions which are visually detectable without the aid of instruments and which contain particulate asbestos material.

(7) "Asbestos mill" means any facility engaged in the conversion of asbestos ore into commercial asbestos. Outside storage of asbestos materials is not considered a part of such facility.

(8) "Commercial asbestos" means any variety of asbestos which is produced by extracting asbestos from asbestos ore.

(9) "Manufacturing" means the combining of commercial asbestos, or in the case of woven fraction products, the combining of textiles containing commercial asbestos, with any other material(s), including commercial asbestos, and the processing of this combination into a product as specified in 13.203.

(10) "Demolition" means the wrecking or taking out of any load-supporting structural member and any related removing or stripping of friable asbestos materials.

(11) "Friable asbestos material" means any material that contains more than 1 percent asbestos by weight and that can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure.

(12) "Control device asbestos waste" means any asbestos-containing waste material that is collected in a pollution control device.

(13) "Renovation" means the removing or stripping of friable asbestos material used to insulate or fireproof any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member. Operations in which load-supporting structural members are wrecked or taken out are excluded.

(14) "Planned renovation" means a renovation operation, or a number of such operations, in which the amount of friable asbestos material that will be removed or stripped within a given period of time can be predicted. Operations that are individually non-scheduled are included, provided a number of such operations can be predicted to occur during a given period of time based on operating experience.

(15) "Emergency renovation" means a renovation operation that results from a sudden, unexpected event, and is not a planned renovation. Operations necessitated by non-routine failures of equipment are included.

(16) "Adequately wetted" means sufficiently mixed or coated with water or an aqueous solution to prevent dust emissions.

(17) "Removing" means taking out friable asbestos materials used to insulate or fireproof any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member from any building, structure, facility, or installation.

(18) "Stripping" means taking off friable asbestos materials used for insulation or fireproofing from any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member.

(19) "Fabricating" means any processing of a manufactured product containing commercial asbestos, with the exception of processing at temporary sites for the construction or restoration of buildings, structures, facilities or installations.

(20) "Inactive waste disposal site" means any disposal site or portion thereof where additional asbestos-containing waste material will not be deposited and where the surface is not disturbed by vehicular traffic.

(21) "Active waste disposal site" means any disposal site other than an inactive site.

(22) "Roadways" means surfaces on which motor vehicles travel including, but not limited to, highways, roads, streets, parking areas, and driveway.

(23) "Asbestos-containing waste material" means any waste which contains commercial asbestos and is generated by a source subject to the provisions of this section, including asbestos mill tailings, control device asbestos waste, friable asbestos waste material, and bags or containers that previously contained commercial asbestos.

(50.7) 13.203 Emission Standard

(1) Asbestos mills: There shall be no visible emissions to the outside air from any asbestos mill except as provided in division (6) of this subsection.

(2) Roadways: The surfacing of roadways with asbestos tailings or with asbestos-containing waste that is generated by any source subject to divisions (3), (4), (5) or (8) of this subsection is prohibited, except for temporary roadways on an area of asbestos ore deposits. The deposition of asbestos tailings or asbestos-containing waste on roadways covered with snow or ice is considered "surfacing."

(3) Manufacturing: There shall be no visible emissions to the outside air, except as provided in division (6) of this subsection, from any of the following operations if they use commercial asbestos or from any building or structure in which such operations are conducted.

(a) The manufacture of cloth, cord, wicks, tubing, tape, twine, rope, thread, yarn, roving, lap, or other textile materials.

(b) The manufacture of cement products.

(c) The manufacture of fireproofing and insulating materials.

(d) The manufacture of fraction products.

(e) The manufacture of paper, millboard, and felt.

(f) The manufacture of floor tile.

(g) The manufacture of paints, coatings, caulks, adhesives, sealants.

(h) The manufacture of plastics and rubber materials.

(i) The manufacture of chlorine.

(j) The manufacture of shotgun shells.

(k) The manufacture of asphalt concrete.

(4) Demolition and renovation: The requirements of this division shall apply to any owner or operator of a demolition or renovation operation who intends to demolish any institutional, commercial, or industrial building (including apartment buildings having more than four dwelling units), structure, facility, installation, or portion thereof which contains any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member that is insulated or fireproofed with friable asbestos material, except as provided in division (4)(a) of this subsection; or who intends to renovate any institutional, commercial, or industrial building, structure, facility, installation, or portion thereof where more than 80 meters (ca. 260 feet) of pipe insulated or fireproofed with friable asbestos material are stripped or removed, or more than 15 square meters (ca. 160 square feet) of friable asbestos material used to insulate or fireproof any duct, boiler, tank, reactor, turbine, furnace, or structural member are stripped or removed.

(a) (i) The owner or operator of a demolition operation is exempted from the requirements of this division provided, (1) the amount of friable asbestos material in the building or portion thereof to be demolished is less than 80 meters (ca. 260 feet) used to insulate pipes, and less than 15 square meters (ca. 160 square feet) used to insulate or fireproof any duct, boiler, tank, reactor, turbine, furnace, or structural member, and (2) the notification requirements of division (4)(a)(ii) are met.

(ii) Written notification shall be postmarked or delivered to the Department at least 20 days prior to commencement of demolition and shall include the information required by division (4)(b) of this subsection, with the exception of the information required by divisions (4)(b)(iii), (vi), (vii), (viii), and (ix), and shall state the measured or estimated amount of friable asbestos material used for insulation and fireproofing which is present. Techniques of estimation shall be explained.

(b) Written notice of intention to demolish or renovate shall be provided to the Department by the owner or operator of the demolition or renovation operation. Such notice shall be postmarked or delivered to the Department at least 10 days prior to commencement of demolition, or as early as possible prior to commencement of emergency demolition subject to division (4)(f) of this subsection, and as early as possible prior to commencement of renovation. Such notice shall include the following information:

(i) Name of owner or operator.

(ii) Address of owner or operator.

(iii) Description of the building, structure, facility, or installation to be demolished or renovated, including the size, age, and prior use of the structure, and the approximate amount of friable asbestos material used for insulation and fireproofing.

(iv) Address or location of the building, structure, facility, or installation.

(v) Scheduled starting and completion dates of demolition or renovation.

(vi) Nature of planned demolition or renovation and method(s) to be employed.

(vii) Procedures to be employed to meet the requirements of this division and division (10) of this subsection.

(viii) The name and address or location of the waste disposal site where the friable asbestos waste will be deposited.

(ix) Name, title, and authority of the State or local government representative who has ordered a demolition which is subject to division (4) (f) of this subsection.

(c) (i) For purposes of determining, whether a planned renovating operation constitutes a renovation within the meaning of this division, the amount of friable asbestos material to be removed or stripped shall be:

((a)) For planned renovating operations involving individually non-scheduled operations, the additive amount of friable asbestos material that can be predicted will be removed or stripped at a source over the maximum period of time for which a prediction can be made. The period shall be not less than 30 days and not longer than one year.

((b)) For each planned renovating operation not covered by division (4)(c)(i)((a)), the total amount of friable asbestos material that can be predicted will be removed or stripped at a source.

(ii) For purposes of determining whether an emergency renovating operation constitutes a renovation within the meaning of this division, the amount of friable asbestos material to be removed or stripped shall be the total amount of friable asbestos material that will be removed or stripped as a result of the sudden, unexpected event that necessitated the renovation.

(d) The following procedures shall be used to prevent emissions of particulate asbestos material to outside air:

(i) Friable asbestos materials, used to insulate or fireproof any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member, shall be removed from any building, structure, facility or installation subject to this division. Such removal shall occur before wrecking or dismantling of any portion of such building, structure, facility, or installation that would break up the friable asbestos materials and before wrecking or dismantling of any other portion of such building, structure, facility, or installation that would preclude access to such materials for subsequent removal. Removal of friable asbestos materials used for insulation or fireproofing of any pipe, duct, or structural member which are encased in concrete or other similar structural material is not required prior to demolition, but such material shall be adequately wetted whenever exposed during demolition.

(ii) Friable asbestos materials used to insulate or fireproof pipes, ducts, boilers, tanks, reactors, turbines, furnaces, or structural members shall be adequately wetted during stripping, except as provided in division (4)(d)(iv), (4)(d)(vi), or (4)(d)(vii) of this subsection.

(iii) Pipes, ducts, boilers, tanks, reactors, turbines, furnaces, or structural members that are insulated or fireproofed with friable asbestos materials may be taken out of any building, structure, facility, or installation subject to this division as units or in sections provided the friable asbestos materials exposed during cutting or disjointing are adequately wetted during the cutting or disjointing operation. Such units shall not be dropped or thrown to the ground, but shall be carefully lowered to ground level.

(iv) The stripping of friable asbestos materials used to insulate or fireproof any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member that has been removed as a unit or in sections as provided in division (4)(d)(iii) of this section shall be performed in accordance with division (4)(d)(ii) of this subsection. Rather than comply with the wetting requirement, a local exhaust ventilation and collection system may be used to prevent emissions to the outside air. Such local exhaust ventilation systems shall be designed and operated to capture the asbestos particulate matter produced by the stripping of friable asbestos material. There shall be no visible emissions to the outside air from such local exhaust ventilation and collection systems except as provided in division (6) of this subsection.

(v) All friable asbestos materials that have been removed or stripped shall be adequately wetted to ensure that such materials remain wet during all remaining stages of demolition or renovation and related handling operations. Such materials shall not be dropped or thrown to the ground or a lower floor. Such materials that have been removed or stripped more than 50 feet above ground level, except those materials removed as units or in sections, shall be transported to the ground via dust-tight chutes or containers.

(vi) Except as specified below, the wetting requirements of this division are suspended when the temperature at the point of wetting is below 0°C (32°F). When friable asbestos materials are not wetted due to freezing temperatures, such materials on pipes, ducts, boilers, tanks, reactors, turbines, furnaces, or structural members shall, to the maximum extent possible, be removed as units or in sections prior to wrecking. In no case shall the requirements of division (4)(d)(iv) or (4)(d)(v) be suspended due to freezing temperatures.

(vii) For renovation operations, local exhaust ventilation and collection systems may be used, instead of wetting as specified in division (4)(d)(ii), to prevent emissions of particulate asbestos material to outside air when damage to equipment resulting from the wetting would be unavoidable. Upon request and supply of adequate information, the Department will determine whether damage to equipment resulting from wetting to comply with the provisions of this division would be unavoidable. Such local exhaust ventilation systems shall be designed and operated to capture the asbestos particulate matter produced by the stripping and removal of friable asbestos material. There shall be no visible emissions to the outside air from such local exhaust ventilation and collection systems, except as provided in division (6) of this subsection.

(e) Sources subject to this division are exempt from the requirements of subsections 13.104(1), 13.106, and 13.107.

(f) The demolition of a building, structure, facility, or installation, pursuant to an order of an authorized representative of a State or local governmental agency, issued because that building is structurally unsound and in danger of imminent collapse is exempt from all but the following requirements of division (4) of this subsection:

(i) The notification requirements specified by division (4)(b) of this subsection;

(ii) The requirements on stripping of friable asbestos materials from previously removed units or sections as specified in division (4)(d)(iv) of this subsection;

(iii) The wetting, as specified by division (4)(d)(v) of this subsection, of friable asbestos materials that have been removed or stripped;

(iv) The portion of the structure being demolished that contains friable asbestos materials shall be adequately wetted during the wrecking operation.

(5) Spraying: There shall be no visible emissions to the outside air from the spray-on application of materials containing more than 1 percent asbestos, on a dry weight basis, used to insulate or fireproof equipment and machinery, except as provided in division (6) of this subsection. Spray-on materials used to insulate or fireproof buildings, structures, pipes, and conduits shall contain less than 1 percent asbestos on a dry weight basis.

(a) Sources subject to this division are exempt from the requirements of 13.104(1), 13.106 and 13.107.

(b) Any owner or operator who intends to spray asbestos materials which contain more than 1 percent asbestos on a dry weight basis to insulate or fireproof equipment and machinery shall report such intention to the Department at least 20 days prior to the commencement of the spraying operation. Such report shall include the following information:

(i) Name of owner or operator.

(ii) Address of owner or operator.

(iii) Location of spraying operation.

(iv) Procedures to be followed to meet the requirements of this division.

(6) Rather than meet the no-visible-emission requirements as specified by divisions (1), (3), (4), (5), (8), (10) and (11) of this subsection, an owner or operator may elect to use the methods specified by subsection 13.204 to clean emissions containing particulate asbestos material before such emissions escape to, or are vented to, the outside air.

(7) Where the presence of uncombined water is the sole reason for failure to meet the no-visible-emission requirement of divisions (1), (3), (4), (5), (8), (10) or (11) of this subsection, such failure shall not be a violation of such emission requirements.

(8) Fabricating: There shall be no visible emissions to the outside air, except as provided in division (6) of this subsection, from any of the following operations if they use commercial asbestos or from any building or structure in which such operations are conducted.

(a) The fabrication of cement building products.

(b) The fabrication of friction products, except those operations that primarily install asbestos friction materials on motor vehicles.

(c) The fabrication of cement or silicate board for ventilation hoods; ovens; electrical panels; laboratory furniture; bulkheads, partitions and ceilings for marine construction; and flow control devices for the molten metal industry.

(9) Insulating: Molded insulating materials which are friable and wet-applied insulating materials which are friable after drying, installed after the effective date of these regulations, shall contain no commercial asbestos. The provisions of this division do not apply to insulating materials which are spray applied; such materials are regulated under subsection 13.203(5).

(10) Waste disposal for manufacturing, fabricating, demolition, renovation and spraying operations: The owner or operator of any source covered under the provisions of divisions (3), (4), (5), or (8) of this subsection shall meet the following standards:

(a) There shall be no visible emissions to the outside air, except as provided in division (10)(c) of this subsection, during the collection; processing, including incineration; packaging; transporting; or deposition of any asbestos-containing waste material which is generated by such source.

(b) All asbestos-containing waste material shall be deposited at waste disposal sites which are operated in accordance with the provisions of subsection 13.206.

(c) Rather than meet the requirement of division (10)(a) of this subsection, an owner or operator may elect to use either of the disposal methods specified under (10)(c)(i) and (ii) of this subsection, or an alternative disposal method which has received prior approval by the Department:

(i) Treatment of asbestos-containing waste material with water:

((a)) Control device asbestos waste shall be thoroughly mixed with water into a slurry and other asbestos-containing waste material shall be adequately wetted. There shall be no visible emissions to the outside air from the collection, mixing and wetting operation except as provided in division (6) of this subsection.

((b)) After wetting, all asbestos-containing waste material shall be sealed into leak-tight containers while wet, and such containers shall be deposited at waste disposal sites which are operated in accordance with the provisions of subsection 13.206.

((c)) The containers specified under division (10)(c)(i)((b)) of this subsection shall be labeled with a warning label that states:

CAUTION

Contains Asbestos
Avoid Opening or Breaking Container
Breathing Asbestos is Hazardous
to Your Health

Alternatively, warning labels specified by Occupational Safety and Health Standards of the Department of Labor, Occupational Safety and Health Administration (OSHA) under 29 CFR 1910.93a-(g)(2)(ii) may be used.

(ii) Processing of asbestos-containing waste material into non-friable forms:

((a)) All asbestos-containing waste material shall be formed into non-friable pellets or other shapes and deposited at waste disposal sites which are operated in accordance with the provisions of subsection 13.206.

((b)) There shall be no visible emissions to the outside air from the collection and processing of asbestos-containing waste material except as specified in division (6) of this subsection.

(d) For the purposes of this division (10), the term all asbestos-containing waste material as applied to demolition and renovation operations covered by division (4) of this subsection includes only friable asbestos waste and control device asbestos waste.

(11) Waste disposal for asbestos mills: The owner or operator of any source covered under the provisions of division (1) of this subsection shall meet the following standard:

(a) There shall be no visible emissions to the outside air, except as provided in division (11)(c) of this subsection, during the collection, processing, packaging, transporting or deposition of any asbestos-containing waste material which is generated by such source.

(b) All asbestos-containing waste material shall be deposited at waste disposal sites which are operated in accordance with the provisions of subsection 13.206.

(c) Rather than meet the requirement of division (11)(a) of this subsection, an owner or operator may elect to meet the following requirements in division (11)(c)(i) and (ii), or use an alternative disposal method which has received prior approval by the Department:

(i) There shall be no visible emissions to the outside air from the transfer of control device asbestos waste to the tailings conveyor, except as provided in division (6) of this subsection. Such waste shall be subsequently processed either as specified in division (11)(c)(ii) of this subsection or as specified in division (10)(c) of this subsection.

(ii) All asbestos-containing waste material shall be adequately mixed, with a wetting agent recommended by the manufacturer of the agent to effectively wet dust and tailings, prior to deposition at a waste disposal site. Such agent shall be used as recommended for the particular dust by the manufacturer of the agent. There shall be no discharge of visible emissions to the outside air from the wetting operation except as specified in division (6) of this subsection. Wetting may be suspended when the ambient temperature at the waste disposal site is less than -9.5°C (ca. 15°F). The ambient air temperature shall be determined by an appropriate measurement method with an accuracy of 41°C(+2°F) and recorded at least at hourly intervals during the period that the operation of the wetting system is suspended. Records of such temperature measurements shall be retained at the source for a minimum of two years and made available for inspection by the Department.

(12) The owner of any inactive waste disposal site, which was operated by sources covered under subsection 13.203(1), (3), or (8) and where asbestos-containing waste material produced by such sources was deposited, shall meet the following standards:

(a) There shall be no visible emissions to the outside air from an inactive waste disposal site subject to this division, except as provided in division (12)(e) of this subsection.

(b) Warning signs shall be displayed at all entrances, and along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material was deposited, at intervals of 100 m (ca. 330 ft.) or less, except as specified in division (12)(d) of this subsection. Signs shall be posted in such a manner and location that a person may easily read the legend. The warning signs required by this division shall conform to the requirements of 20" x 14" upright format signs specified in 29 CFR 1910.145-(d)(4) and this division. The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to those specified in this division.

LEGEND

ASBESTOS WASTE DISPOSAL SITE

Do Not Create Dust

Breathing Asbestos is Hazardous
to Your Health

Notation

1" Sans Serif, Gothic or Block

3/4" Sans Serif, Gothic or Block

14 Point Gothic

Spacing between lines shall be at least equal to the height of the upper of the two lines.

(c) The perimeter of the site shall be fenced in a manner, adequate to deter access by the general public, except as specified in division (12)(d) of this subsection.

(d) Warning signs and fencing are not required where the requirements of divisions (12)(e)(i) or (ii) of this subsection are met, or where a natural barrier adequately deters access by the general public. Upon request and supply of appropriate information, the Department will determine whether a fence or a natural barrier adequately deters access to the general public.

(e) Rather than meet the requirement of division (12)(a) of this subsection, an owner may elect to meet the requirements of this subsection or may use all alternative control method for emissions from inactive waste disposal sites which has received prior approval by the Department.

(i) The asbestos-containing waste material shall be covered with at least 15 centimeters (ca. 6 inches) of compacted non-asbestos-containing material, and a cover of vegetation shall be grown and maintained on the area adequate to prevent exposure of the asbestos-containing waste material; or

(ii) The asbestos-containing waste material shall be covered with at least 60 centimeters (ca. 2 feet) of compacted non-asbestos-containing material and maintained to prevent exposure of the asbestos-containing waste; or

(iii) For inactive waste disposal sites for asbestos tailings, a resinous or petroleum-based dust suppression agent which effectively binds dust and controls wind erosion shall be applied. Such agent shall be used as recommended for the particular asbestos tailings by the dust suppression agent manufacturer. Other equally effective dust suppression agents may be used upon prior approval by the Department. For purposes of this division, waste crankcase oil is not considered a dust suppression agent.

(8.0) 13.204 Air-Cleaning

If air-cleaning is elected, as permitted by 13.203(6) and 13.203(4)(d)(iv), the requirements of this subsection must be met.

(1) Fabric filter collection devices must be used, except as noted in divisions (2) and (3) of this subsection. Such devices must be operated at a pressure drop of no more than 4 inches water gage, as measured across the filter fabric. The airflow permeability, as determined by ASTM Method D737-69, must not exceed 30 $ft^3/min/ft^2$ for woven fabrics or 35 $ft^3/min/ft^2$ for felted fabrics, except that 40 $ft^3/min/ft^2$ for woven and 45 $ft^3/min/ft^2$ for felted fabrics is allowed for filtering air from asbestos ore dryers. Each square yard of felted fabric must weigh at least 14 ounces and be at least one-sixteenth inch thick throughout. Synthetic fabrics must not contain fill yarn other than that which is spun.

(2) If the use of fabric filters creates a fire or explosion hazard, the Department may authorize the use of wet collectors designed to operate with a unit contacting energy of at least 40 inches water gage pressure.

(3) The Department may authorize the use of filtering equipment other than that described in divisions (1) and (2) of this subsection if the owner or operator demonstrates to the satisfaction of the Department that the filtering of particulate asbestos material is equivalent to that of the described equipment.

(4) All air-cleaning equipment authorized by this subsection must be properly installed, used, operated, and maintained. Bypass devices may be used only during upset or emergency conditions and then only for so long as it takes to shut down the operation generating the particulate asbestos material.

(13.0) 13.205 Reporting

The owner or operator of any existing source to which this section is applicable shall, within 90 days after the effective date, provide the following information to the Department.

(1) A description of the emission control equipment used for each process;

(2) If the fabric filter device is used to control emissions, the pressure drop across the fabric filter in inches water gage.

(a) If the fabric filter device utilizes a woven fabric the airflow permeability in ft$^3$/min/ft$^2$; and, if the fabric is synthetic, indicate whether the fill yarn is spun or not spun.

(b) If the fabric filter device utilizes a felted fabric, the density in oz/yd$^2$, the minimum thickness in inches, and the airflow permeability in ft$^3$/min/ft$^2$.

(3) For sources subject to subsections 13.203(10) and 13.203(11):

(a) A brief description of each process that generates asbestos-containing waste material.

(b) The average weight of asbestos-containing waste material disposed of, measured in kg/day.

(c) The emission control methods used in all stages of waste disposal.

(d) The type of disposal site or incineration site used for ultimate disposal, the name of the site operator, and the name and location of the disposal site.

(4) For sources subject to subsection 13.203(12):

(a) A brief description of the site.

(b) The method or methods used to comply with the standard, or alternative procedures to be used.

(5) Such information shall accompany the information required by subsection 13.108. The information described in this subsection shall be reported using the format of Appendix A of this regulation.

(51.9) 13.206 Waste Disposal Sites

In order to be an acceptable site for disposal of asbestos-containing waste material under subsection 13.203(10) and (11), an active waste disposal site shall meet the requirements of this subsection.

(1) There shall be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, except as provided in division (5) of this subsection.

(2) Warning signs shall be displayed at all entrances, and along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited, at intervals of 100 m (ca. 330 ft) or less except as specified in division (4) of this subsection. Signs shall be posted in such a manner and location that a person may easily read the legend. The warning signs required by this division shall conform to the requirements of 20" x 14" upright format signs specified in 29CFR 1910.145(d)(4) and this division. The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to those specified in this division.

LEGEND

ASBESTOS WASTE DISPOSAL SITE

Do Not Create Dust

Breathing Asbestos
is Hazardous to Your Health

Notation

1" Sans Serif, Gothic or Block

3/4" Sans Serif, Gothic or Block

14 Point Gothic

Spacing between lines shall be at least equal to the height of the upper of the two lines.

(3) The perimeter of the disposal site shall be fenced in order to adequately deter access to the general public except as specified in division (4) of this subsection.

(4) Warning signs and fencing are not required where the requirements of division (5)(a) of this subsection are met, or where a natural barrier adequately deters access to the general public. Upon request and supply of appropriate information, the Department will determine whether a fence or a natural barrier adequately deters access to the general public.

(5) Rather than meet the requirements of division (1) of this subsection, an owner or operator may elect to meet the requirements of division (5)(a) or (5)(b) of this sub-

section, or may use an alternative control method for emissions from active waste disposal sites which has received prior approval by the Department.

(a) At the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material which was deposited at the site during the operating day or previous 24-hour period shall be covered with at least 15 centimeters (ca. 6 inches) of compacted non-asbestos-containing material.

(b) At the end of each operating day, or at least once every 24-hour period while the disposal site is in continuous operation, the asbestos-containing waste material which was deposited at the site during the operating day or previous 24-hour period shall be covered with a resinous or petroleum-based dust suppression agent which effectively binds dust and controls wind erosion. Such agent shall be used as recommended for the particular dust by the dust suppression agent manufacturer. Other equally effective dust suppression agents may be used upon prior approval by the Department. For purposes of this division, waste crankcase oil is not considered a dust suppression agent.

## (50.7) 13.300 EMISSION STANDARD FOR BERYLLIUM

### (2.0) 13.301 Applicability

The provisions of this section are applicable to the following stationary sources:

(1) Extraction plants, ceramic plants, foundries, incinerators, and propellant plants which process beryllium ore, beryllium, beryllium oxide, beryllium alloys, or beryllium-containing waste.

(2) Machine shops which process beryllium, beryllium oxides, or any alloy when such alloy contains more than 5 percent beryllium by weight.

### (1.0) 13.302 Definitions

As used in this section, all terms not defined in this subsection shall have the meaning given to them in the Act or in subsection 13.102.

(1) "Beryllium" means the element beryllium. Where weights or concentrations are specified, such weights or concentrations apply to beryllium only, excluding the weight or concentration of any associated elements.

(2) "Extraction plant" means a facility chemically processing beryllium ore to beryllium metal, alloy, or oxide, or performing any of the intermediate steps in these processes.

(3) "Beryllium ore" means any naturally occurring material mined or gathered for its beryllium content.

(4) "Machine shop" means a facility performing cutting, grinding, turning, honing, milling, deburring, lapping, electrochemical machining, etching, or other similar operations.

(5) "Ceramic plant" means a manufacturing plant producing ceramic items.

(6) "Foundry" means a facility engaged in the melting or casting of beryllium metal or alloy.

(7) "Beryllium-containing waste" means material contaminated with beryllium and/or beryllium compounds used or generated during any process or operation performed by a source subject to this section.

(8) "Incinerator" means any furnace used in the process of burning waste for the primary purpose of reducing the volume of the waste by removing combustible matter.

(9) "Propellant" means a fuel and oxidizer physically or chemically combined which undergoes combustion to provide rocket propulsion.

(10) "Beryllium alloy" means any metal to which beryllium has been added in order to increase its beryllium content and which contains more than 0.1 percent beryllium by weight.

(11) "Propellant plant" means any facility engaged in the mixing, casting, or machining of propellant.

(50.7) 13.303 Emission Standard

(1) Emissions to the atmosphere from stationary sources

subject to the provisions of this section shall not exceed 10 grams of beryllium over a 24-hour period, except as provided in division (2) of this subsection.

(2) Rather than meet the requirement of division (1) of this subsection, an owner or operator may request approval from the Department to meet an ambient concentration limit on beryllium in the vicinity of the stationary source of 0.01 ug/m$^3$, averaged over a 30-day period.

(a) Approval of such requests may be granted by the Department provided that:

(i) At least 3 years of data is available which in the judgment of the Department demonstrates that the future ambient concentrations of beryllium in the vicinity of the stationary source will not exceed 0.01 ug/m$^3$, averaged over a 30-day period. Such 3-year period shall be the 3 years ending 30 days before the effective date of this standard.

(ii) The owner or operator requests such approval in writing within 30 days after the effective date of this standard.

(iii) The owner or operator submits a report to the Department within 45 days after the effective date of this standard which report includes the following information:

((a)) Description of sampling method including the method and frequency of calibration.

((b)) Method of sample analysis.

((c)) Averaging technique for determining 30-day average concentrations.

((d)) Number, identity, and location (address, coordinates, or distance and heading from plant) of sampling sites.

((e)) Ground elevations and height above ground of sampling inlets.

((f)) Plant and sampling area plots showing emission points and sampling sites. Topographic features significantly affecting dispersion including plant building heights and locations shall be included.

((g)) Information necessary for estimating dispersion including stack height, inside diameter, exit gas temperature, exit velocity or flow rate, and beryllium concentration.

((h)) A description of data and procedures (methods or models) used to design the air sampling network (i.e., number and location of sampling sites).

((i)) Air sampling data indicating beryllium concentrations in the vicinity of the stationary source for the 3-year period specified in division (2)(a) of this subsection. This data shall be presented chronologically and include the beryllium concentration and location of each individual sample taken by the network and the corresponding 30-day average beryllium concentrations.

(b) Within 60 days after receiving such report, the Department will notify the owner or operator in writing whether approval is granted or denied. Prior to denying approval to comply with the provisions of division (2) of this subsection, the Department will consult with representatives of the stationary source for which the demonstration report was submitted.

(3) The burning of beryllium and/or beryllium-containing waste, except propellants, is prohibited except in incinerators, emissions from which must comply with the standard.

(9.0) 13.304 Stack Sampling

(1) Unless a waiver of emission testing is obtained under 13.111, each owner or operator required to comply with 13.303(1) shall test emissions from his source.

(a) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(b) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(2) The Department shall be notified at least 30 days prior to an emission test so that it may observe the test.

(3) Samples shall be taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in any 24-hour period. Where emissions depend upon the relative frequency of operation of different types of processes, operating hours, operating capacities, or other factors, the calculation of maximum 24-hour-period emissions will be based on that combination of factors which is likely to occur during the subject period and which result in the maximum emissions. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until a new emission level has been estimated by calculation and the results reported to the Department.

(4) All samples shall be analyzed and beryllium emissions shall be determined within 30 days after the source test. All determinations shall be reported to the Department by a registered letter dispatched before the close of the next business day following such determination.

(5) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available, for inspection by the Department, for a minimum of 2 years.

(9.0) 13.305 Air Sampling

(1) Stationary sources subject to 13.303(2) shall locate air sampling sites in accordance with a plan approved by the Department. Such sites shall be located in such a manner as is calculated to detect maximum concentrations of beryllium in the ambient air.

(2) All monitoring sites shall be operated continuously except for a reasonable time allowance for instrument maintenance and calibration, for changing filters, or for replacement of equipment needing major repair.

(3) Filters shall be analyzed and concentrations calculated within 30 days after filters are collected. Records of concentrations at all sampling sites and other data needed to determine such concentrations shall be retained at the source and made available, for inspection by the Department, for a minimum of 2 years.

(4) Concentrations measured at all sampling sites shall be reported to the Department every 30 days by a registered letter.

(5) The Department may at any time require changes in, or expansion of, the sampling network.

## (50.7) 13.400 EMISSION STANDARD FOR BERYLLIUM ROCKET MOTOR FIRING

### (2.0) 13.401 Applicability

The provisions of this section are applicable to rocket motor test sites.

### (1.0) 13.402 Definitions

As used in this section, all terms not defined in this subsection shall have the meaning given to them in the Act or in subsection 13.102.

(1) "Rocket motor test site" means any building, structure, facility, or installation where the static test firing of a beryllium rocket motor and/or the disposal of beryllium propellant is conducted.

(2) "Beryllium propellant" means any propellant incorporating beryllium.

### (50.7) 13.403 Emission Standard

(1) Emissions to the atmosphere from rocket-motor test sites shall not cause time-weighted atmospheric concentrations of beryllium to exceed 75 microgram minutes per cubic meter of air within the limits of 10 to 60 minutes, accumulated during any 2 consecutive weeks, in any area in which an effect adverse to public health could occur.

(2) If combustion products from the firing of beryllium propellant are collected in a closed tank, emissions from such tank shall not exceed 2 grams per hour and a maximum of 10 grams per day.

### (9.0) 13.404 Emission Testing - Rocket Firing or Propellant Disposal

(1) Ambient air concentrations shall be measured during and after firing of a rocket motor or propellant disposal and in such a manner that the effect of these emissions can be compared with the standard. Such sampling techniques shall be approved by the Department.

(2) All samples shall be analyzed and results shall be calculated within 30 days after samples are taken and before any subsequent rocket motor firing or propellant disposal at the given site. All results shall be reported to the

Department by a registered letter dispatched before the close of the next business day following determination of such results.

(3) Records of air sampling test results and other data needed to determine integrated intermittent concentrations shall be retained at the source and made available for inspection by the Department, for a minimum of 2 years.

(4) The Department shall be notified at least 30 days prior to an air sampling test, so that he may at his option observe the test.

(9.0) 13.405 Stack Sampling

(1) Sources subject to 13.403(2) shall be continuously sampled, during release of combustion products from the tank, in such a manner that compliance with the standards can be determined. The provisions of 13.112 shall apply,

(2) All samples shall be analyzed, and beryllium emissions shall be determined within 30 days after samples are taken and before any subsequent rocket motor firing or propellant disposal at the given site. All determinations shall be reported to the Department by a registered letter dispatched before the close of the next business day following such determinations.

(3) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available, for inspection by the Department, for a minimum of 2 years.

(4) The Department shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

(50.7) 13.500 EMISSION STANDARD FOR MERCURY

(2.0) 13.501 Applicability

The provisions of this section are applicable to those stationary sources which process mercury ore to recover mercury, use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, and incinerate or dry wastewater treatment plant sludge.

(1.0) 13.502 Definitions

As used in this section, all terms not defined in this subsection shall have the meaning given to them in the Act or in subsection 13.102.

(1) "Mercury" means the element mercury, excluding any associated elements, and includes mercury in particulates, vapors, aerosols, and compounds.

(2) "Mercury ore" means a mineral mined specifically for its mercury content.

(3) "Mercury ore processing facility" means a facility processing mercury ore to obtain mercury.

(4) "Condenser stack gases" mean the gaseous effluent evolved from the stack of processes utilizing heat to extract mercury metal from mercury ore.

(5) "Mercury chlor-alkali cell" means a device which is basically composed of an electrolyzer section and a denuder (decomposer) section and utilizes mercury to produce chlorine gas, hydrogen gas, and alkali metal hydroxide.

(6) "Mercury chlor-alkali electrolyzer" means an electrolytic device which is part of a mercury chlor-alkali cell and utilizes a flowing mercury cathode to produce chlorine gas and alkali metal amalgam.

(7) "Denuder" means a horizontal or vertical container which is part of a mercury chlor-alkali cell and in which water and alkali metal amalgam are converted to alkali metal hydroxide, mercury, and hydrogen gas in a short-circuited, electrolytic reaction.

(8) "Hydrogen gas stream" means a hydrogen stream formed in the chlor-alkali cell denuder.

(9) "End box" means a container(s) located on one or both ends of a mercury chlor-alkali electrolyzer which serves as a connection between the electrolyzer and denuder for rich and stripped amalgam.

(10) "End box ventilation system" means a ventilation system which collects mercury emissions from the end-boxes, the mercury sump pumps, and their water collection systems.

(11) "Cell room" means a structure(s) housing one or more mercury electrolytic chlor-alkali cells.

(12) "Sludge" means sludge produced by a treatment plant that processes municipal or industrial waste waters.

(13) "Sludge dryer" means a device used to reduce the moisture content of sludge by heating to temperatures above 65°C (ca. 150°F) directly with combustion gases.

### (50.7) 13.503 Emission Standard

(1) Emission to the atmosphere from mercury ore processing facilities and mercury cell chlor-alkali plants shall not exceed 2,300 grams of mercury per 24-hour period.

(2) Emissions to the atmosphere from sludge incineration plants, sludge drying plants, or a combination of these that process wastewater treatment plant sludges shall not exceed 3,200 grams of mercury per 24-hour period.

### (9.0) 13.504 Stack Sampling

(1) Mercury ore processing facility.

(a) Unless a waiver of emission testing is obtained under 13.111, each owner or operator processing mercury ore shall test emissions from his source.

(i) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(ii) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(b) The Department shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

(c) Samples shall be taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in a 24-hour period. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until the new emission level has been estimated by calculation and the results reported to the Department.

(d) All samples shall be analyzed, and mercury emissions shall be determined within 30 days after the source test. Each determination will be reported to the Department by a registered letter dispatched before the close of the next business day following such determination.

(e) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available, for inspection by the Department, for a minimum of 2 years.

(2) Mercury chlor-alkali plant-hydrogen and end-box ventilation gas streams.

(a) Unless a waiver of emission testing is obtained under 13.111, each owner or operator employing mercury chlor-alkali cell(s) shall test emissions from his source.

(i) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(ii) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(b) The Department shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

(c) Samples shall be taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in a 24-hour period. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until the new emission has been estimated by calculation and the results reported to the Department.

(d) All samples shall be analyzed and mercury emissions shall be determined within 30 days after the source test. All the determinations will be reported to the Department by a registered letter dispatched before the close of the next business day following such determination.

(e) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available, for inspection by the Department, for a minimum of 2 years.

(3) Mercury chlor-alkali plants - cell room ventilation system.

(a) Stationary sources using mercury chlor-alkali cells may test cell room emissions in accordance with division (3)(b) of this subsection or demonstrate compliance with division (3)(d) of this subsection and assume ventilation emissions of 1,300 gms/day of mercury.

(b) Unless a waiver of emission testing is obtained under 13.111, each owner or operator shall pass all cell room air in forced gas streams through stacks suitable for testing.

(i) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(ii) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(c) The Department shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

(d) An owner or operator may carry out approved design, maintenance, and housekeeping practices. A list of approved design, maintenance, and housekeeping practices may be obtained from the Department.

(4) Sludge incineration and drying plants.

(a) Unless a waiver of emission testing is obtained under subsection 13.111, each owner or operator of a source subject to the standard in subsection 13.503(2) shall test emissions from that source. Such tests shall be conducted in accordance with the procedures set forth either in division (4) of this subsection or in subsection 13.505.

(b) Method 101 in Appendix B to this part shall be used to test emissions as follows:

(i) The test shall be performed within 90 days of the effective date of these regulations in the case of an existing source or a new source which has an initial startup date preceding the effective date.

(ii) The test shall be performed within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(c) The Department shall be notified at least 30 days prior to an emission test, so that it may at its option observe the test,

(d) Samples shall be taken over such a period or periods as are necessary to determine accurately the maximum emissions which will occur in a 24-hour period. No changes shall be made in the operation which would potentially increase emissions above the level determined by the most recent stack test, until the new emissions level has been estimated by calculation and the results reported to the Department.

(e) All samples shall be analyzed, and mercury emissions shall be determined within 30 days after the stack test. Each determination shall be reported to the Department by a registered letter dispatched before the close of the next business day following such determination.

(f) Records of emission test results and other data needed to determine total emissions shall be retained at the source and shall be made available, for inspection by the Department, for a minimum of 2 years.

(9.0) 13.505 Sludge Sampling

(1) As an alternative means for demonstrating compliance with subsection 13.503(2), an owner or operator may use Method 105 of Appendix B and the procedures specified in this subsection.

(a) A sludge test shall be conducted within 90 days of the effective date of these regulations in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(b) A sludge test shall be conducted within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(2) The Department shall be notified at least 30 days prior to a sludge sampling test, so that it may at its option observe the test.

(3) Sludge shall be sampled according to division (3)(a) of this subsection, sludge charging rate for the plant shall be determined according to division (3)(b) of this subsection, and the sludge analysis shall be performed according to division (3)(c) of this subsection.

(a) The sludge shall be sampled after de-watering and before incineration or drying, at a location that provides a representative sample of the sludge that is charged to the incinerator or dryer. Eight consecutive grab samples shall be obtained at intervals of between 45 and 60 minutes and thoroughly mixed into one sample. Each of the eight grab samples shall have a volume of at least 200 ml but not more than 400 ml. A total of three composite samples shall be obtained within an operating period of 24 hours. When the 24-hour operating period is not continuous, the total sampling period shall not exceed 72 hours after the first grab sample is obtained. Samples shall not be exposed to any condition that may result in mercury contamination or loss.

(b) The maximum 24-hour period sludge incineration or drying rate shall be determined by use of a flow rate measurement device that can measure the mass rate of sludge charged to the incinerator or dryer with an accuracy of ±5 percent over its operating range. Other methods of measuring sludge mass charging rates may be used if they have received prior approval by the Department.

(c) The handling, preparation, and analysis of sludge samples shall be accomplished according to Method 105 in Appendix B of this part.

(4) The mercury emissions shall be determined by use of the following equation:

$$E_{Hg} = 1 \times 10^{-3} cQ$$

where:

$E_{Hg}$ = Mercury emissions, g/day.

c = Mercury concentration of sludge on a dry solids basis, ug/g (ppm).

Q = Sludge charging rate, kg/day.

(5) No changes in the operation of a plant shall be made after a sludge test has been conducted which would potentially increase emissions above the level determined by the most recent sludge test, until the new emission level has been estimated by calculation and the results reported to the Department.

(6) All sludge samples shall be analyzed for mercury content within 30 days after the sludge sample is collected. Each determination shall be reported to the Department by a registered letter dispatched before the close of the next business day following such determination.

(7) Records of sludge sampling, charging rate determination and other data needed to determine mercury content of wastewater treatment plant sludges shall be retained at the source and made available, for inspection by the Department, for a minimum of 2 years.

(9.0) 13.506 Emission Monitoring

(1) Wastewater treatment plant sludge incineration and drying plants. All such sources for which mercury emissions exceed 1600 g/day, demonstrated either by stack sampling according to subsection 13.504 or sludge sampling according to subsection 13.505, shall monitor mercury emissions at intervals of at least once per year by use of Method 105 of Appendix B, or the procedures specified in subsection 13.505(3) and (4). The results of monitoring shall be reported and retained according to subsection 13.504(4)(e) and (f), or subsection 13.505(6) and (7).

# R23-25-13

## APPENDIX

The appendix references, as specified within R-23-25-13, are identical to those specified in Appendix A and Appendix B, as amended, of Title 40 Code of Federal Regulations, Part 61 (40 CFR 61). Adopted, by reference, are the following:

Appendix A - Compliance Status Information

Appendix B - Test Methods

- Method 101 - Reference Method for Determination of Particulate and Gaseous Mercury Emissions from Stationary Sources (air streams)
- Method 102 - Reference Method for Determination of Particulate and Gaseous Mercury Emissions from Stationary Sources (hydrogen streams)
- Method 103 - Beryllium Screening Method
- Method 104 - Reference Method for Determination of Beryllium Emissions from Stationary Sources
- Method 105 - Method for Determination of Mercury in Wastewater Treatment Plant Sewage Sludges

## R23-25-14 DESIGNATED AIR CONTAMINANT SOURCES, PERMIT TO CONSTRUCT, PERMIT TO OPERATE

## 14.100 DESIGNATED AIR CONTAMINANT SOURCES

### 14.110 Designated Source Categories

Pursuant to Subsection 1. of Section 23-25-04.1 of the North Dakota Century Code, stationary sources within the following source categories are designated as air contaminant sources capable of causing or contributing to air pollution, either directly or indirectly.

(1) The following chemical process facilities:

  (a) Adipic acid.

  (b) Ammonia.

  (c) Ammonium nitrate.

  (d) Carbon black.

  (e) Charcoal.

  (f) Chlorine.

  (g) Chlor-alkali manufacturing.

  (h) Detergent and soap.

  (i) Explosives (TNT and nitrocellulose).

  (j) Hydrochloric acid.

  (k) Hydrofluoric acid.

  (l) Nitric acid.

  (m) Paint and varnish manufacturing.

  (n) Phosphoric acid.

  (o) Phthalic anhydride.

  (p) Plastics manufacturing.

  (q) Printing ink manufacturing.

  (r) Sodium carbonate.

(s) Sulfur production and recovery.

(t) Sulfuric acid.

(u) Synthetic fibers.

(v) Synthetic rubber.

(w) Terephthalic acid.

(2) The following food and agricultural facilities:

(a) Agricultural drying and dehydrating operations.

(b) Ammonium nitrate.

(c) Cheese whey drying and processing.

(d) Coffee roasting.

(e) Cotton ginning.

(f) Feed, grain and seed handling and processing.

(g) Fermentation processes.

(h) Fertilizers.

(i) Fish meal processing.

(j) Meat smoke houses.

(k) Orchard heaters.

(l) Potato processing.

(m) Rendering plants.

(n) Starch manufacturing.

(o) Sugarbeet processing.

(3) The following metallurgical facilities:

(a) Primary metals facilities:

(i) Aluminum ore reduction.

(ii) Copper smelters.

(iii) Ferroalloy production.

(iv) Iron and steel mills.

(v) Lead smelters.

(vi) Metallurgical coke manufacturing.

(vii) Zinc.

(b) Secondary metals facilities:

(i) Aluminum operations.

(ii) Brass and bronze smelting.

(iii) Ferroalloys.

(iv) Ferrous foundries.

(v) Gray iron foundries.

(vi) Lead smelting.

(vii) Magnesium smelting.

(viii) Non-ferrous foundries.

(ix) Steel foundries.

(x) Zinc processes.

(4) The following mineral products facilities:

(a) Asphalt roofing.

(b) Asphaltic concrete plants.

(c) Bricks and related clay refractories.

(d) Calcium carbide.

(e) Ceramic and clay processes.

(f) Clay and fly ash sintering.

(g) Coal cleaning.

(h) Coal drying.

(i) Coal mining.

(j) Coal handling and processing.

(k) Concrete batching.

(l) Fiberglass manufacturing.

(m) Frit manufacturing.

(n) Glass manufacturing.

(o) Gypsum manufacturing.

(p) Leonardite mining, drying and processing.

(q) Lime manufacturing.

(r) Mineral wool manufacturing.

(s) Paperboard manufacturing.

(t) Perlite manufacturing.

(u) Phosphate rock preparation.

(v) Portland cement manufacturing, bulk handling and storage.

(w) Rock, stone, gravel, and sand quarrying and processing.

(x) Uranium mining, milling and enrichment.

(5) The following energy and fuel facilities:

(a) Coal gasification.

(b) Coal liquefication.

(c) Crude oil and natural gas production.

(d) Fossil fuel steam electric plants.

(e) Fuel conversion plants.

(f) Natural gas processing.

(g) Petroleum refining and petrochemical operations.

(h) Petroleum storage (storage tanks and bulk terminals).

(6) The following wood processing facilities:

(a) Wood pulping.

   - (b) Pulpboard manufacturing.
   - (c) Plywood veneer and layout operations.

(7) The following gaseous, liquid, and solid waste disposal facilities:

   - (a) Afterburners.
   - (b) Automobile body incinerators.
   - (c) Conical burners.
   - (d) Flares.
   - (e) Gaseous and liquid organic compounds incinerators.
   - (f) Industrial waste incinerators.
   - (g) Open burning.
   - (h) Open pit incinerators.
   - (i) Pathological waste incinerators.
   - (j) Refuse incinerators.
   - (k) Scrape metal salvage incinerators.
   - (l) Sewage sludge incinerators.
   - (m) Wood waste incinerators.

(8) The following miscellaneous facilities:

   - (a) Dry cleaning and laundry operations.
   - (b) Fuel burning equipment.
   - (c) Internal combustion engines.
   - (d) Surface coating operations.
   - (e) Wastewater treatment plants (including lagoons).
   - (f) Water cooling towers and water cooling ponds.

(9) Any category of sources to which a Federal standard of performance applies.

(10) Any source which emits a contaminant subject to a national emission standard for hazardous air pollutants.

(11) Any source which is subject to review under Federal significant deterioration of air quality regulations.

(12) Any source which is determined by the Department to have an emission which effects State Ambient Air Quality Standards.

### (3.0) 14.200 PERMIT TO CONSTRUCT

#### (3.0) 14.201 Permit to Construct Required

No construction, installation, or establishment of a new stationary source within a source category designated in subsection 14.110 of Section 14.100 of this regulation shall be commenced unless the owner or operator thereof shall file an application for, and receive, a permit to construct in accordance with this regulation. This requirement shall also apply to any source for which a federal standard of performance has been promulgated prior to such filing of an application for a Permit to Construct. A list of sources for which a federal standard has been promulgated, and the standards which apply to such sources, shall be available at the Department's offices.

#### (3.0) 14.202 Application for Permit to Construct

(1) Application for a permit to construct a new installation or source shall be made by the owner or operator thereof on forms furnished by the Department.

(2) A separate application is required for each new installation or source subject to this regulation.

(3) Each application shall be signed by the applicant, which signature shall constitute an agreement that the applicant will assume responsibility for the construction, or operation of the new installation or source in accordance with these regulations and will notify the Department, in writing, of the start-up of operation of such source.

#### (3.0) 14.203 Alterations to Source

(1) The addition to or enlargement of or replacement of or major alteration in any stationary source, already existing, which is undertaken pursuant to an approved compliance schedule for the reduction of emissions therefrom, shall be exempt from the requirements of this section.

(2) Any physical change in, or change in the method of operation of, a stationary source already existing which increases or may increase the emission rate of any pollutant for which an ambient air quality standard has been promulgated under these regulations or which results in the emission of any such pollutant not previously emitted shall be considered to be construction, installation, or establishment of a new source, except that:

   (a) Routine maintenance, repair, and replacement shall not be considered a physical change, and

   (b) The following shall not be considered a change in the method of operation:

      (i) An increase in the production rate, if such increase does not exceed the operating design capacity of the source;

      (ii) An increase in the hours of operation.

### (3.0) 14.204 Submission of Plans - Deficiencies in Application

As part of an application for a permit to construct, the Department may require the submission of plans, specifications, siting information, emission information, descriptions and drawings showing the design of the installation or source, the manner in which it will be operated and controlled, the emissions expected from it, and the effects on ambient air quality. Any additional information, plans, specifications, evidence or documentation that the Department may require shall be furnished upon request. Within twenty (20) days of the receipt of the application, the Department shall advise the owner or operator of the proposed source of any deficiency, the date of receipt of the application shall be the date upon which all requested information is received.

### (3.0) 14.205 Review of Application - Standard for Granting Permits to Construct

The Department shall review any plans, specifications, and other information submitted in application for a permit to construct and from such review shall, within thirty (30) days of the receipt of the completed application, make the following preliminary determinations:

(1) Whether the proposed project will be in accord with these regulations, including whether the operation of any new stationary source at the proposed location will result in any applicable ambient air quality standards being exceeded.

(2) Whether the proposed project will provide all known available and reasonable methods of emission control. Whenever a standard of performance is applicable to the source, compliance with this criterion will require provision of emission control which will, at least, satisfy such standards.

(3.0) 14.206 Public Participation - Final Action on Application

The Department shall:

(1) Within thirty (30) days of the receipt of the completed application, make available in at least one location in the county or counties in which the proposed project is to be located, a copy of its preliminary determinations and copies of or a summary of the information considered in making such preliminary determinations.

(2) Publish notice to the public by prominent advertisement, within thirty (30) days of the receipt of the completed application, in the region affected, of the opportunity for written comment on the preliminary determinations. Such public notice shall include the proposed location of the source.

(3) Within thirty (30) days of the receipt of the completed application, deliver a copy of the notice to the applicant and to officials and agencies having cognizance over the locations where the source will be situated as follows: State and local air pollution control agencies, the chief executive of the city and county; any comprehensive regional land use planning agency; the Regional Administrator of the United States Environmental Protection Agency; and any State, Federal Land Manager or Indian Governing Body whose lands will be significantly affected by the source's emissions.

(4) Allow thirty (30) days for public comment.

(5) Consider all public comments properly received, in making the final decision on the application.

(6) Allow the applicant to submit written responses to public comments received by the Department, within ten (10) days of the receipt of such comments.

(7) Take final action on the application within thirty (30) days of the close of the public comment period.

(3.0) 14.207 Denial of Permit to Construct

If, after review of all information received, including public comment with respect to any proposed project, the Department makes the determination of any one of divisions (1) or (2) of subsection 14.205 of this section in the negative, it shall deny the permit and notify the applicant, in writing, of the denial to issue a permit to construct. If a permit to construct is denied, the construction, installation, or establishment of the new stationary source shall be unlawful. No permit to construct or modify shall be granted if such construction, or modification, or installation, will result in a violation of these regulations or in a violation of the Ambient Air Quality Standards.

(3.0) 14.208 Issuance of Permit to Construct

If, after review of all information received, including public comment with respect to any proposed project, the Department makes the determination of divisions (1) and (2) of subsection 14.205 of this section in the affirmative, the Department shall issue a permit to construct. Such permit may provide for conditions of operation as provided in subsection 14.209.

(3.0) 14.209 Permit to Construct - Conditions

The Department may impose any reasonable conditions upon a permit to construct, including conditions concerning:

(1) Sampling, testing, and monitoring of the facilities or the ambient air or both;

(2) Trial operation and performance testing;

(3) Prevention and abatement of nuisance conditions caused by operation of the facility;

(4) Record keeping and reporting; and

(5) Compliance with applicable rules and regulations in accordance with a compliance schedule.

The violation of any conditions so imposed may result in revocation or suspension of the permit or other appropriate enforcement action.

(3.0) 14.210 Scope

(1) The issuance of a permit to construct for any source shall not affect the responsibility of an owner or

operator to comply with applicable portions of a control strategy affecting that source.

(2) A permit to construct shall become invalid if construction or expansion is not commenced within 18 months after receipt of such permit or if construction is discontinued for a period of 18 months or more. The Department may extend such time periods upon a satisfactory showing that an extension is justified.

## (3.0) 14.300 PERMIT TO OPERATE

### (3.0) 14.301 Permit to Operate Required

(1) No person shall operate or cause the routine operation of a new installation or source designated in subsection 14.110 of section 14.100 of this regulation without applying for and obtaining, in accordance with this regulation, a permit to operate. Application for a permit to operate a new installation or source shall be made at least thirty (30) days prior to start-up of routine operation.

(2) No person shall operate or cause the operation of an installation or source in violation of any permit to operate, any condition imposed upon a permit to operate or in violation of these regulations.

### (3.0) 14.302 Application for Permit to Operate

(1) Application for a permit to operate shall be made by the owner or operator thereof on forms furnished by the Department.

(2) Each application for a permit to operate shall be accompanied by such performance tests results, information, and records as may be required by the Department to determine whether the requirements of these regulations will be met. Such information may also be required by the Department at any time when the source is being operated to determine compliance with these regulations.

(3) Each application shall be signed by the applicant, which signature shall constitute an agreement that the applicant will assume responsibility for the operation of the installation or source in accordance with these regulations.

### (3.0) 14.303 Standards for Granting Permits to Operate

No permit to operate shall be granted unless the applicant shows to the satisfaction of the Department that the source is in compliance with these regulations.

### (3.0) (9.0) 14.304 Performance Testing

Before a permit to operate is granted, the applicant, if required by the Department, shall conduct performance tests in accordance with methods and procedures required by these regulations or methods and procedures approved by the Department. Such tests shall be made at the expense of the applicant. The Department may monitor such tests and may also conduct performance tests.

### (3.0) 14.305 Action on Applications

(1) The Department shall act within thirty (30) days after receipt of an application for a permit to operate a new installation or source, and within thirty (30) days after receipt of an application to operate an existing installation or source, and shall notify the applicant, in writing, of the approval, conditional approval, or denial of the application.

(2) The Department shall set forth in any notice of denial the reasons for denial. A denial shall be without prejudice to the applicant's right to a hearing before the Department or for filing a further application after revisions are made to meet objections specified as reasons for the denial.

### (3.0) 14.306 Permit to Operate - Conditions

The Department may impose any reasonable conditions upon a permit to operate, including conditions concerning:

(1) Sampling, testing and monitoring of the facilities or ambient air or both;

(2) Trial operation and performance testing;

(3) Prevention and abatement of nuisance conditions caused by operation of the facility;

(4) Record keeping and reporting; and

(5) Compliance with applicable rules and regulations in accordance with a compliance schedule.

### (3.0) 14.307 Suspension or Revocation of Permit to Operate

(1) The Department may suspend or revoke a permit to operate for violation of these regulations and any permit conditions.

(2) Suspension or revocation of a permit to operate shall become final ten days after service of notice on the holder of the permit.

(3) A permit to operate which has been revoked pursuant to these regulations shall be surrendered forthwith to the Department.

(4) No person shall operate or cause the operation of an installation or source if the Department denies or revokes a permit to operate.

### (3.0) 14.308 Transfer of Permit to Operate

The holder of a permit to operate may not transfer it without the prior approval of the Department.

### (3.0) 14.309 Renewal of Permit to Operate

(1) Every permit to operate issued by the Department after the effective date of this regulation shall become void upon the third anniversary of their issuance. Applications for renewal of such permits shall be submitted sixty (60) days prior to such anniversary date. The Department shall approve or disapprove such application within sixty (60) days.

(2) The Department may amend permits issued prior to the effective date of this regulation so as to provide for voidance upon the third anniversary of their issuance of such permit.

## (3.0) 14.400 COMMON PROVISIONS APPLICABLE TO BOTH PERMIT TO CONSTRUCT AND PERMIT TO OPERATE

### (2.0) 14.401 Exemptions

A permit to construct and a permit to operate shall not be required for the following stationary sources:

(1) Maintenance, structural changes or minor repair of process equipment, fuel-burning equipment, control equipment, or incinerators which do not change capacity of such process equipment, fuel-burning equipment, con-

trol equipment, or incinerators and which do not involve any change in the quality, nature, or quantity, of emissions therefrom.

(2) Fuel-burning equipment, other than smoke-house generators, which have a heat input of not more than 10 million BTUs per hour and burn only gaseous fuel containing not more than 0.5 grains $H_2S$ per 100 standard cubic feet (5.7 g/100 $\text{stdm}^3$); or have a heat input of not more than 10 million BTUs per hour and burn distillate oil as a fuel; or have a heat input of not more than 1 million BTUs per hour and burn residual oil as a fuel; or have a heat input of not more than 350,000 BTUs per hour and burn solid fuel.

(3) Internal combustion engines with less than 500 brake horsepower.

(4) Bench scale laboratory equipment used exclusively for chemical or physical analysis or experimentation.

(5) Portable brazing, soldering, or welding equipment.

(6) The following equipment:

(a) Comfort air conditioners or comfort ventilating systems which are not designed and not intended to be used to remove emissions generated by or released from specific units or equipment.

(b) Water cooling towers and water cooling ponds unless used for evaporative cooling of process water, or for evaporative cooling of water from barometric jets or barometric condensors or used in conjunction with an installation requiring a permit.

(c) Equipment used exclusively for steam cleaning.

(d) Grain, metal, plastic or mineral extrusion presses.

(e) Porcelain enameling furnaces or porcelain enameling drying ovens.

(f) Unheated solvent dispensing containers or unheated solvent rinsing containers of 60 gallons capacity or less.

(g) Equipment used for hydraulic or hydrostatic testing.

(7) The following equipment or any exhaust system or collector serving exclusively such equipment:

   (a) Blast cleaning equipment using a suspension of abrasive in water.

   (b) Bakery ovens where the products are edible and intended for human consumption.

   (c) Kilns for firing ceramic ware, heated exclusively by gaseous fuels, singly or in combinations and electricity.

   (d) Confection cookers where the products are edible and intended for human consumption.

   (e) Drop hammers or hydraulic presses for forging or metal working.

   (f) Die casting machines.

   (g) Photographic process equipment through which an image is reproduced upon material through the use of sensitized radiant energy.

   (h) Equipment for drilling, carving, cutting, routing, turning, sawing, planning, spindle sanding or disc sanding of wood or wood products, which is located within a facility that does not vent to the outside air.

   (i) Equipment for surface preparation of metals by use of aqueous solutions, except for acid solutions.

   (j) Equipment for washing or drying products fabricated from metal or glass; provided, that no volatile organic materials are used in the process and that no oil or solid fuel is burned.

   (k) Laundry dryers, extractors or tumblers for fabrics cleaned with only water solutions of bleach or detergents.

   (l) Containers, reservoirs, or tanks used exclusively for electrolytic plating with, or electrolytic polishing of, or electrolytic stripping of the following metals: brass, bronze, cadmium, copper, iron, lead, nickel, tin, zinc, precious metals.

(8) Natural draft hoods or natural draft ventilators.

(9) Containers, reservoirs or tanks used exclusively for:

  (a) Dipping operations for coating objects with oils, waxes, or greases, where no organic solvents are used.

  (b) Dipping operations for applying coatings of natural or synthetic resins which contain no organic solvents.

  (c) Storage of butane, propane or liquefied petroleum or natural gas.

  (d) Storage of lubricating oils.

  (e) Storage of Nos. 1, 2, 4, 5 and 6 fuel oil, non-military jet engine fuel, and crude petroleum or condensate which is stored, processed, and/or treated at a drilling and production facility prior to custody transfer and does not contain dissolved hydrogen sulfide.

  (f) Storage of volatile organic compounds in any stationary tank, reservoir, or other container of 40,000 gallons or less.

(10) Gaseous fuel-fired or electrically-heated furnaces for heat treating glass or metals, the use of which does not involve molten materials.

(11) Crucible furnaces, pot furnaces or induction furnaces, with a capacity of 1,000 pounds or less each, unless otherwise noted, in which no sweating or distilling is conducted, nor any fluxing conducted utilizing chloride, fluoride, or ammonium compounds, and from which only the following metals are held in a molten state:

  (a) Aluminum or any alloy containing over 50 percent aluminum, provided that no gaseous chlorine compounds, chlorine, aluminum chloride or aluminum fluoride are used.

  (b) Magnesium or any alloy containing over 50 percent magnesium.

  (c) Lead or any alloy containing over 50 percent lead, in a furnace with a capacity of 550 pounds or less.

  (d) Tin or any alloy containing over 50 percent tin.

(e) Zinc or any alloy containing over 50 percent zinc.

(f) Copper.

(g) Precious metals.

(12) Open burning activities within the scope of section 4.200 of regulation 23-25-04 of these regulations.

(13) Flares used to indicate some danger to the public.

(14) Other sources of minor significance as determined by the Department.

(9.0) 14.402 Performance and Emission Testing

(1) Emission tests or performance tests or both shall be conducted by the owner or operator of a facility and data reduced in accordance with the applicable procedure, limitations, standards and test methods established by these regulations. Such tests shall be conducted under the owner's or operator's permit to construct or operate and such permit is subject to the faithful completion of the test in accordance with these regulations.

(2) All dates and periods of trial operation for the purpose of performance or emission testing pursuant to a permit to construct, and all dates of performance or emission testing pursuant to a permit to operate, must be approved in advance by the Department. Trial operation shall cease if the Department determines, on the basis of the test results, that continued operation will result in the violation of these regulations. Upon completion of any test conducted under a permit to construct, the Department may order the cessation of the operation of the tested equipment or facility until such time as a permit to operate has been issued by the Department.

(3) Upon review of the performance data resulting from any test, the Department may require the installation of such additional control equipment as will bring the facility into compliance with these regulations.

(4) Nothing in these regulations shall be construed to prevent the Department from conducting any test upon its own initiative, or from requiring the owner or operator to conduct any test at such time as the Department may determine.

(6.0) 14.403 Responsibility to Comply

(1) Possession of a permit to construct or a permit to operate shall not relieve any person of the responsibility to comply with these regulations.

(2) The exemption of any stationary source from the requirements of a permit to construct or a permit to operate by reason of inclusion in subsection 14.401 shall not relieve the owner or operator of such source of the responsibility to comply with any other applicable portions of these regulations.

(3.0) 14.404 Portable Sources

Sources which are designed to be portable and which are operated at temporary jobsites across the State shall not be considered a new source by virtue of location changes. One application for a permit to operate any portable source shall be filed in accordance with Regulation 23-25-14 and subsequent applications are not required for each temporary jobsite. The permit to operate issued by the Department shall be conditioned by such specific requirements as the Department deems appropriate to carry out the provisions of section 1.050 and 1.140 of R23-25-01.

(3.0) 14.405 Registration of Exempted Stationary Sources

The Department may require that the owner or operator of any stationary source exempted under subsection 14.401 shall register the source with the Department within such time limits and on such forms as the Department may prescribe.

(3.0) 14.406 Extensions of Time

The Department may extend any of the time periods specified in subsections 14.204, 14.205, 14.206 and 14.305 as agreed by the applicant and the Department.

(3.0) 14.407 Amendment of Permits

The Department may, when the public interest requires, modify any condition of a permit to operate or permit to construct. Modification shall be made only upon the Department's own motion and the procedure shall, at a minimum, conform to any requirements of federal law. In the event such law is inapplicable, modification procedure shall consist of the following:

(1) Reasonable notice to the permittee of the proposed modification;

(2) Reasonable notice to the public, in the area to be affected, of opportunity for comment on the proposed modification;

(3) A minimum of twenty (20) day period for public comment; and

(4) Consideration by the Department of all comments received, in its order for modification.

The Department may require the submission of such maps, plans, specifications, emission information and compliance schedules as it deems necessary prior to the issuance of an order for modification. It is the intention of the Department that this subsection shall apply only in those instances allowed by federal rules and regulations and only in those instances in which the granting of a variance pursuant to section 1.060 and enforcement of existing permit conditions are manifestly inappropriate.

## R23-25-15 PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY

## (2.0) 15.100 GENERAL PROVISIONS

### (1.0) 15.101 Definitions

(1) The term "best available control technology," as applied to any affected facility subject to Regulation 23-25-12 means any emission control device or technique which is capable of limiting emissions to the levels promulgated in Regulation 23-25-12. Where no standard of performance has been promulgated for a source or portion thereof under such regulation, best available control technology shall be determined on a case-by-case basis considering the following:

(a) The process, fuels, and raw material available and to be employed in the facility involved,

(b) The engineering aspects of the application of various types of control techniques which have been adequately demonstrated,

(c) Process and fuel changes,

(d) The respective costs of the application of all such control techniques, process changes, alternative fuels, etc.

(e) Any applicable State and local emission limitations, and

(f) Locational and siting considerations.

(2) "Facility" means an identifiable piece of process equipment. A stationary source is composed of one or more pollutant-emitting facilities.

(3) The phrases "modification" or "modified source" mean any physical change in, or change in the method of operation of, a stationary source which increases the emission rate of any pollutant for which an ambient air quality standard has been promulgated under these regulations or which results in the emission of any such pollutant not previously emitted, except that:

(a) Routine maintenance, repair, and replacement shall not be considered a physical change, and

(b) The following shall not be considered a change in the method of operation:

(i) An increase in the production rate, if such increase does not exceed the operating design capacity of the source;

(ii) An increase in the hours of operation.

(4) The term "stationary source" means any building, structure, facility, or installation which emits or may emit an air pollutant for which an ambient air quality standard is in effect.

(17.0) 15.102 Significant Deterioration of Air Quality

(1) Area designation and deterioration increment:

(a) The provisions of this regulation do not apply in those counties or other functionally equivalent areas that pervasively exceeded any ambient air quality standard during 1974 for sulfur dioxide or particulate matter and then only with respect to such pollutants.

(b) For purposes of this regulation, areas designated as Class I or II shall be limited to the following increases in pollutant concentration occurring since January 1, 1975:

Area Designations

| Pollutant | Class I (ug/m$^3$) | Class II (ug/m$^3$) |
|---|---|---|
| Particulate matter: | | |
| Annual geometric mean | 5 | 10 |
| 24-hour maximum | 10 | 30 |
| Sulfur dioxide: | | |
| Annual arithmetic mean | 2 | 15 |
| 24-hr maximum | 5 | 100 |
| 3-hour maximum | 25 | 700 |

Any conflict between an applicable increment and an applicable ambient air quality standard shall be resolved in favor of the more stringent limitation and the source shall be limited to such more stringent limitation.

(c) For purposes of this regulation, areas designated as Class III shall be limited to concentrations of particulate matter and sulfur dioxide no greater than the ambient air quality standards.

(d) The air quality impact of sources granted a permit to construct or modify prior to January 1, 1975 (pursuant to the approved new source review procedures in the plan) but not yet operating prior to January 1, 1975, shall not be counted against the air quality increments specified in subdivision (b) of this division.

(e) All areas of the State are hereby designated Class II.

(2) Review of new sources.

(a) The requirements of this regulation shall apply to any new or modified stationary source of the type identified below which has not been issued a permit to construct or modify prior to June 1, 1975. Review of those sources identified below shall be conducted in conjunction with the issuance of permits to construct pursuant to section 14.200 of these regulations. A source which is modified, but does not increase the amount of sulfur oxides or particulate matter emitted, or is modified to utilize an alternative fuel, or higher sulfur content fuel, shall not be subject to this regulation.

(i) Fossil-Fuel Steam Electric Plants of more than 1000 million BTU per hour heat input.

(ii) Coal Cleaning Plants.

(iii) Kraft Pulp Mills.

(iv) Portland Cement Plants.

(v) Primary Zinc Smelters.

(vi) Iron and Steel Mills.

(vii) Primary Aluminum Ore Reduction Plants.

(viii) Primary Copper Smelters.

(ix) Municipal Incinerators capable of charging more than 250 tons of refuse per 24-hour day.

(x) Sulfuric Acid Plants.

(xi) Petroleum Refineries.

(xii) Lime Plants.

(xiii) Phosphate Rock Processing Plants.

(xiv) By-Product Coke Oven Batteries.

(xv) Sulfur Recovery Plants.

(xvi) Carbon Black Plants (furnace process).

(xvii) Primary Lead Smelters.

(xviii) Fuel Conversion Plants.

(xix) Ferroalloy production facilities.

(xx) Coal Mines.

(xxi) Electric Arc Furnaces.

(b) No owner or operator of a source subject to this regulation shall be issued a permit to construct or modify a source subject to this regulation unless the Department determines that, on the basis of information submitted pursuant to subdivision (c) of this division:

(i) The effect on air quality concentration of the source or modified source and the direct and indirect emissions growth associated with or induced by such source or both, in conjunction with the effects of growth and reduction in emissions after January 1, 1975, of other sources in the area affected by the proposed source, will not violate the air quality increments applicable in any other areas. The analysis of emissions growth and reduction after January 1, 1975, or other sources in the areas affected by the proposed source shall include all new and modified sources issued permits to construct pursuant to this subdivision; reduction in emissions from existing sources which contributed to air quality during all or part of 1974; general commercial, residential, industrial, and other sources of emissions growth not exempted by subsection 15.102(2)(d) which has occurred since January 1, 1975; and the direct and indirect emissions growth associated with or induced by the proposed source or both.

(ii) The new or modified source will meet an emission limit, to be specified by the Department as a condition of the permit which represents that level of emission reduction which would be achieved by the application of best available control technology for particulate matter and sulfur dioxide. If the Department determines that technological or economic limitations on the application of measurement methodology to a particular class of sources would make the imposition of an emission standard infeasible, it may instead prescribe a design or equipment standard requiring the application of best available control technology. Such standard shall to the greatest degree possible set forth the emission reductions achievable by implementation of such design or equipment, and shall provide for compliance by means which achieve equivalent results.

(iii) With respect to modified sources, the requirements of subdivision (b)(ii) of this division shall be applicable only to the facility or facilities from which emissions are increased.

(c) In making the determinations required by division (2)(b) of this subsection, the Department shall, as a minimum, require the owner or operator of the source subject to this division to submit: site information; plans, description, specifications, and drawings showing the design of the source; information necessary to determine the impact that the construction or modification will have on sulfur dioxide and particulate matter air quality levels; information on the nature and extent of direct and indirect emissions growth that will be associated with or induced by the source or both; and any other information necessary to determine that best available control technology will be applied. Upon request of the Department, the owner or operator of the source shall also provide information on the nature and extent of general commercial, residential, industrial, and other growth which has occurred in the area affected by the source's emissions (such area to be specified by the Department) since January 1, 1975. The information required herein shall be submitted in conjunction with subsection 14.204 of these regulations.

(d) Where an owner or operator has applied for permission to construct or modify pursuant to this division and the proposed source would be located in an area which has been proposed for redesignation to a more stringent class (or the State, Indian Governing Body, or Federal Land Manager has announced such consideration), approval will not be granted until the Department has acted on the proposed redesignation.

(3) Reclassification of Areas

(a) Reclassification by Petition

(i) Filing of Petition

After twenty percent of the qualified electors in any county, as determined by the vote cast for the office of Governor at the last preceding gubernatorial election, shall petition the Department to reclassify any area within such county to Class I, Class II or Class III, the Department shall hold a hearing and take such other action as specified in (5) of this subsection. The Department shall reclassify the area proposed in the petition for reclassification only if such reclassification is substantially supported by the hearing record.

(ii) Contents of Petition

The petition for petitioning the Department to reclassify any area to either Class I, Class II or Class III as specified in subsection 15.102 (1)(b) and (c) shall contain a legal description of the area in which the petition is to affect; an explanation of the meaning and purpose of the petition and reclassification; a statement to the effect that those persons signing the petition desire the described area to be reclassified to either Class I, Class II or Class III and such statement shall specify which class; a list of those persons or person circulating such petition, which persons shall be designated "Committee of Petitioners"; an affidavit to be attached to each petition and sworn to under oath before a notary public by the person circulating each petition attesting to the fact that he circulated such petition and that each of the signatures to such petition is the genuine signature of the person whose name it purports to be, and that each such person is a qualified elector in the county in which the petition was circulated; all petitions' signatures shall be numbered and dated by month, day and year, and the name shall be written with residence, address and post office address including the county of residence followed by State of North Dakota.

(b) Reclassification upon Department's own Motion

At such time as the Department may determine, it may hold a public hearing and take such other action as specified in (4) of this subsection in order to reclassify any area of this state to Class I, Class II or Class III. The Department shall reclassify the area proposed for reclassification only if such reclassification is substantially supported by the hearing record.

(4) Procedures for Reclassification

The Department may reclassify any area of this state to either Class I, Class II or Class III pursuant to subdivisions (3)(a) and (b) of this subsection, provided that:

(a) At least one public hearing is held in or near the area affected and this public hearing is held in accordance with the procedures established in division (5) of this subsection, and

(b) Other states which may be affected by the proposed redesignation are notified at least 30 days prior to the public hearing, and

(c) A discussion of the reasons for the proposed redesignation is available for public inspection at least 30 days prior to the hearing and the notice announcing the hearing contains appropriate notification of the availability of such discussion, and

(d) The proposed redesignation is based on the record of the state's hearing, which must reflect the basis for the proposed redesignation, including consideration of (i) growth anticipated in the area, (ii) the social, environmental and economic effects of such redesignation and upon other areas and states, and (iii) any impacts of such proposed redesignation upon regional or national interest. Anticipated growth shall include growth resulting both directly and indirectly from proposed development.

(e) The Department may reclassify any federally-owned lands within the state to Class I, Class II, or Class III, provided that: (i) The redesignation is consistent with adjacent state and privately-owned land, and (ii) Such redesignation is proposed after consultation with the Federal Land Manager.

(5) Reclassification Hearings

(a) Any hearing required by division (4) of this subsection shall be held only after reasonable notice, which shall be considered to include, at least 30 days prior to the date of such hearing(s):

(i) Notice given to the public by prominent advertisement in the region affected announcing the date(s), time(s) and place(s) of such hearing(s);

(ii) Availability of each proposed plan or revision for public inspection in at least one location in each region to which it will apply, and the availability of each compliance schedule for public inspection in at least one location in the region in which the affected source is located;

(iii) Notification to the Administrator of the U.S.E.P.A. (through the appropriate regional office);

(iv) Notification to each local air pollution control agency in each region to which the plan, schedule, or revision will apply; and

(v) In the case of an interstate region, notification to any other states included, in whole or in part, in the region.

(b) The Department shall prepare and retain for inspection, a record of each hearing. The record shall contain, as a minimum, a list of witnesses together with the text of each presentation.

(c) Any hearing held pursuant to the provisions of this division shall be held only for the purpose of considering such reclassification as has been noticed under the provisions of division (4), and consideration of reclassification to other classes not so noticed shall not be allowed.

(d) Any hearing held pursuant to these provisions may be continued for such purposes and for such periods of time as the Department may determine.

(6) Environmental Impact Assessment

Prior to the granting or denial of the petition for reclassification, the Department may require any committee of petitioners, as designated pursuant to division (3)(a)(ii) of this subsection, to submit a detailed report on those matters specified in division (4)(d) of this subsection.

## R23-25-12

## APPENDIX A - REFERENCE METHODS

The reference methods specified within R23-25-12 are identical to those specified in Appendix A, as amended, of Title 40 Code of Federal Regulations, Part 60 (40 CFR 60). The methods, adopted by reference, are as follows:

Method 1 - Sample and Velocity Traverses for Stationary Sources

Method 2 - Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)

Method 3 - Gas Analysis for Carbon Dioxide, Excess Air, and Dry Molecular Weight

Method 4 - Determination of Moisture in Stack Gases

Method 5 - Determination of Particulate Emissions from Stationary Sources

Method 6 - Determination of Sulfur Dioxide Emissions from Stationary Sources

Method 7 - Determination of Nitrogen Oxide Emissions from Stationary Sources

Method 8 - Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources

Method 9 - Visual Determination of the Opacity of Emissions from Stationary Sources

Method 10 - Determination of Carbon Monoxide Emissions from Stationary Sources

Method 11 - Determination of Hydrogen Sulfide Emissions from Stationary Sources

Method 12 - Reserved

Method 13A - Determination of Total Fluoride Emissions from Stationary Sources-SPADNS Zirconium Lake Method

Method 13B - Determination of Total Fluoride Emissions from Stationary Sources-Specific Ion Electrode Method

# APPENDIX B - PERFORMANCE SPECIFICATIONS

The performance specifications specified within R23-25-12 are identical to those specified in Appendix B, as amended, of Title 40 Code of Federal Regulations, Part 60 (40 CFR 60). The specifications, adopted by reference, are as follows:

Performance Specification 1 - Performance specifications and specification test procedures for transmissometer systems for continuous measurement of the opacity of stack emission.

Performance Specification 2 - Performance specifications and specification test procedures for monitors of $SO_2$ and $NO_x$ from stationary sources.

Performance Specification 3 - Performance specifications and specification test procedures for monitors of $CO_2$ and $O_2$ from stationary sources.

# FEDERALLY PROMULGATED
# REGULATIONS

206a

(10.0) 52.1824 Review of New or Modified Indirect Sources

(b) Regulation for Review of New or Modified Indirect Sources

(1) All terms used in this paragraph but not specifically defined below shall have the meaning given them in 52.01 of this chapter.

(i) The term "indirect source" means a facility, building, structure, or installation which attracts or may attract mobile source activity that results in emissions of a pollutant for which there is a national standard. Such indirect sources include, but are not limited to:

(a) Highways and roads.

(b) Parking facilities.

(c) Retail, commercial and industrial facilities.

(d) Recreation, amusement, sports and entertainment facilities.

(e) Airports.

(f) Office and Government buildings.

(g) Apartment and condominium buildings.

(h) Education facilities.

(ii) The term "Administrator" means the Administrator of the Environmental Protection Agency or his designated agent.

(iii) The term "associated parking area" means a parking facility or facilities owned and/or operated in conjunction with an indirect source.

(iv) The term "aircraft operation" means an aircraft take-off or landing.

(v) The phrase "to commence construction" means to engage in a continuous program of on-site construction including site clearance, grading, dredging, or land filling specifically designed for an indirect source in preparation for the fabrication, erection, or installation of the building components of the indirect source. For the purpose of this paragraph, interruptions resulting from acts of God, strikes, litigation, or other matters beyond the control of the owner shall be disregarded in determining whether a construction or modification program is continuous.

(vi) The phrase "to commence modification" means to engage in a continuous program of on-site modification, including site clearance, grading, dredging, or land filling in preparation for specific modification of the indirect source.

(vii) The term "highway section" means the development proposal of a highway of substantial length between logical termini (major crossroads, population centers, major traffic generators, or similar major highway control elements) as normally included in a single location study or multi-year highway improvement program as set forth in 23 CFR 770.201 (38 FR 31677).

(viii) The term "highway project" means all or a portion of a highway section which would result in a specific construction contract.

(ix) The term "Standard Metropolitan Statistical Area (SMSA)" means such areas as designated by the U.S. Bureau of the Budget in the following publication: "Standard Metropolitan Statistical Area," issued in 1967, with subsequent amendments.

(2) The requirements of this paragraph are applicable to the following:

(i) In an SMSA:

(a) Any new parking facility or other new indirect source with an associated parking area, which has a new parking capacity of 1,000 cars or more; or

(b) Any modified parking facility, or any modification of an associated parking area, which increases parking capacity by 500 cars or more; or

(c) Any new highway project with an anticipated average annual daily traffic volume of 20,000 or more vehicles per day within ten years of construction; or

(d) Any modified highway project which will increase average annual daily traffic volume by 10,000 or more vehicles per day within ten years after modification.

(ii) Outside an SMSA:

(a) Any new parking facility, or other new indirect source with an associated parking area, which has a parking capacity of 2,000 cars or more; or

- (b) Any modified parking facility, or any modification of an associated parking area, which increases parking capacity by 1,000 cars or more.

(iii) Any airport, the construction or general modification program of which is expected to result in the following activity within ten years of construction or modification:

- (a) New airport: 50,000 or more operations per year by regularly scheduled air carriers, or use by 1,600,000 or more passengers per year.
- (b) Modified airport: Increase of 50,000 or more operations per year by regularly scheduled air carriers over the existing volume of operations, or increase of 1,600,000 or more passengers per year.

(iv) Where an indirect source is constructed or modified in increments which individually are not subject to review under this paragraph, and which are not part of a program of construction or modification in planned incremental phases approved by the Administrator, all such increments commenced after December 31, 1974, or after the latest approval hereunder, whichever date is most recent, shall be added together for determining the applicability of this paragraph.

(3) No owner or operator of an indirect source subject to this paragraph shall commence construction or modification of such source after December 31, 1974, without first obtaining approval from the Administrator. Application for approval to construct or modify shall be by means prescribed by the Administrator, and shall include a copy of any draft or final environmental impact statement which has been prepared pursuant to the National Environmental Policy Act (42 U.S.C. 4321). If not included in such environmental impact statement, the Administrator may request the following information:

(i) For all indirect sources subject to this paragraph, other than highway projects:

- (a) The name and address of the applicant.
- (b) A map showing the location of the site of indirect source and the topography of the area.
- (c) A description of the proposed use of the site, including the normal hours of operation of the facility, and the general types of activities to be operated therein.

(d) A site plan showing the location of associated parking areas, points of motor vehicle ingress and egress to and from the site and its associated parking areas, and the location and height of buildings on the site.

(e) An identification of the principal roads, highways, and intersections that will be used by motor vehicles moving to or from the indirect source.

(f) An estimate, as of the first year after the date the indirect source will be substantially complete and operational, of the average daily traffic volumes, maximum traffic volumes for one-hour and eight-hour periods, and vehicle capacities of the principal roads, highways, and intersections identified pursuant to subdivision (i) (e) of this subparagraph located within one-fourth mile of all boundaries of the site.

(g) Availability of existing and projected mass transit to service the site.

(h) Where approval is sought for indirect sources to be constructed in incremental phases, the information required by this subparagraph (3) shall be submitted for each phase of the construction project.

(i) Any additional information or documentation that the Administrator deems necessary to determine the air quality impact of the indirect source, including the submission of measured air quality data at the proposed site prior to construction or modification.

(ii) For airports:

(a) An estimate of the average number and maximum number of aircraft operations per day by type of aircraft during the first, fifth and tenth years after the date of expected completion.

(b) A description of the commercial, industrial, residential and other development that the applicant expects will occur within three miles of the perimeter of the airport within the first five and the first ten years after the date of expected completion.

(c) Expected passenger loadings at the airport.

(d) The information required under subdivisions (i) (a) through (i) of this subparagraph.

(iii) For highway projects:

(a) A description of the average and maximum traffic volumes for one, eight, and 24-hour time periods expected within 10 years of date of expected completion.

(b) An estimate of vehicle speeds for average and maximum traffic volume conditions and the vehicle capacity of the highway project.

(c) A map showing the location of the highway project, including the location of buildings along the right-of-way.

(d) A description of the general features of the highway project and associated right-of-way, including the approximate height of buildings adjacent to the highway.

(e) Any additional information or documentation that the Administrator deems necessary to determine the air quality impact of the indirect source, including the submission of measured air quality data at the proposed site prior to construction or modification.

(iv) For indirect sources other than airports and those highway projects subject to the provisions of paragraph (b) (6) (iii) of this section, the air quality monitoring requirements of paragraph (b) (3) (i) (i) of this section shall be limited to carbon monoxide, and shall be conducted for a period of not more than 14 days.

(4) (i) For indirect sources other than highway projects and airports, the Administrator shall not approve an application to construct or modify if he determines that the indirect source will:

(a) Cause a violation of the control strategy of any applicable state implementation plan; or

(b) Cause or exacerbate a violation of the national standards for carbon monoxide in any region or portion thereof.

(ii) The Administrator shall make the determination pursuant to paragraph (b) (4) (i) (b) of this section by evaluating the anticipated concentration of carbon monoxide at reasonable receptor or exposure sites which will be affected by the mobile source activity expected to be attracted by the indirect source. Such determination may be made by using traffic flow characteristic guidelines published by the Environmental Protection Agency which relate traffic demand and capacity considerations to ambient carbon monoxide impact, by use of appropriate atmospheric diffusion models (examples of which are referenced in Appendix O to Part 51 of this chapter), and/or by any other reliable analytic method. The applicant may (but need not) submit with his application, the results of an appropriate diffusion model and/or any other reliable analytic method, along with the technical data and information supporting such results. Any such results and supporting data submitted by the applicant shall be considered by the Administrator in making his determination pursuant to paragraph (b) (4) (i) (b) of this section.

(5) (i) For airports subject to this paragraph, the Administrator shall base his decision on the approval or disapproval of an application on the considerations to be published as an Appendix to this Part.

(ii) For highway projects and parking facilities specified under paragraph (b) (2) of this section which are associated with airports, the requirements and procedures specified in paragraphs (b) (4) and (6) (i) and (ii) of this section shall be met.

(6) (i) For all highway projects subject to this paragraph, the Administrator shall not approve an application to construct or modify if he determines that the indirect source will:

(a) Cause a violation of the control strategy of any applicable state implementation plan; or

(b) Cause or exacerbate a violation of the national standards for carbon monoxide in any region or portion thereof.

(ii) The determination pursuant to paragraph (b) (6) (i) (b) of this section shall be made by evaluating the anticipated concentration of carbon monoxide at reasonable receptor or exposure sites which will be affected by the mobile source activity expected on the highway for the ten year period following the expected date of completion according to the procedures specified in paragraph (b) (4) (ii) of this section.

(iii) For new highway projects subject to this paragraph with an anticipated average daily traffic volume of 50,000 or more vehicles within ten years of construction, or modifications to highway projects subject to this paragraph which will increase average daily traffic volume by 25,000 or more vehicles within ten years after modification, the Administrator's decision on the approval or disapproval of an application shall be based on the considerations to be published as an Appendix to this Part in addition to the requirements of paragraph (b) (6) (i) of this section.

(7) The determination of the air quality impact of a proposed indirect source "at reasonable receptor or exposure sites", shall mean such locations where people might reasonably be exposed for time periods consistent with the national ambient air quality standards for the pollutants specified for analysis pursuant to this paragraph.

(8) (i) Within 20 days after receipt of an application or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the information submitted in support of the application. In the event of such a deficiency, the date of receipt of the application for the purpose of paragraph (b) (8) (ii) of this section shall be the date on which all required information is received by the Administrator.

(ii) Within 30 days after receipt of a complete application, the Administrator shall:

(a) Make a preliminary determination whether the indirect source should be approved, approved with conditions in accordance with paragraphs (b) (9) or (10) of this section, or disapproved.

(b) Make available in at least one location in each region in which the proposed indirect source would be constructed, a copy of all materials submitted by the owner or operator, a copy of the Administrator's preliminary determination, and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and

(c) Notify the public, by prominent advertisement in a newspaper of general circulation in each region in which the proposed indirect source would be constructed, of the opportunity for written public comment on the information submitted by the owner or operator and the Administrator's preliminary determination on the approvability of the indirect source.

(iii) A copy of the notice required pursuant to this subparagraph shall be sent to the applicant and to officials and agencies having cognizance over the location where the indirect source will be situated, as follows: State and local air pollution control agencies, the chief executive of the city and county; any comprehensive regional land use planning agency; and for highways, any local board or committee charged with responsibility for activities in the conduct of the urban transportation planning process (3-C process) pursuant to 23 U.S.C. 134.

(iv) Public comments submitted in writing within 30 days after the date such information is made available shall be considered by the Administrator in making his final decision on the application. No later than 10 days after the close of the public comment period, the applicant may submit a written response to any comments submitted by the public. The Administrator shall consider the applicant's response in making his final decision. All comments shall be made available for public inspection in at least one location in the region in which the indirect source would be located.

(v) The Administrator shall take final action on an application within 30 days after the close of the public comment period. The Administrator shall notify the applicant in writing of his approval, conditional approval, or denial of the application, and shall set forth his reasons for conditional approval or denial. Such notification shall be made available for public inspection in at least one location in the region in which the indirect source would be located.

(vi) The Administrator may extend each of the time periods specified in paragraphs (b) (8) (ii), (iv), or (v) of this section by no more than 30 days, or such other period as agreed to by the applicant and the Administrator.

(9) (i) Whenever an indirect source as proposed by an owner or operator's application would not be permitted to be constructed for failure to meet the tests set forth pursuant to paragraphs (b) (4) (i), (b) (5) (i), or (b) (6) (i) and (iii) of this section, the Administrator may impose reasonable conditions on an approval related to the air quality aspects of the proposed indirect source so that such source, if constructed or modified in accordance with such conditions, could meet the tests set forth pursuant to paragraphs (b) (4) (i), (b) (5) (i), or (b) (6) (i) and (iii) of this section. Such conditions may include, but not be limited to:

(a) Binding commitments to roadway improvements or additional mass transit facilities to serve the indirect source secured by the owner or operator from governmental agencies having jurisdiction thereof;

(b) Binding commitments by the owner or operator to specific programs for mass transit incentives for employees and patrons of the source; and

(c) Binding commitments by the owner or operator to construct, modify, or operate the indirect source in such a manner as may be necessary to achieve the traffic flow characteristics published by the Environmental Protection Agency pursuant to paragraph (b) (4) (ii) of this section.

(ii) The Administrator may specify that any items of information provided in an application for approval related to the operation of an indirect source which may affect the source's air quality impact shall be considered permit conditions.

(10) Notwithstanding the provisions relating to modified indirect sources contained in paragraph (b) (2) of this section, the Administrator may condition any approval by reducing the extent to which the indirect source may be further modified without resubmission for approval under this paragraph.

(11) Any owner or operator who fails to construct an indirect source in accordance with the application as approved by the Administrator; any owner or operator who fails to construct and operate an indirect source in accordance with conditions imposed by the Administrator under paragraph (b) (9) of this section; any owner or operator who modifies an indirect source in violation of conditions imposed by the Administrator under paragraph (b) (10) of this section; or any owner or operator of an indirect source subject to this paragraph who commences construction or modification thereof after December 31, 1974, without applying for and receiving approval hereunder, shall be subject to the penalties specified under section 113 of the Act and shall be considered in violation of an emission standard or limitation under section 304 of the Act. Subsequent modification to an approved indirect source may be made without applying for permission pursuant to this paragraph only where such modification would not violate any condition imposed pursuant to paragraphs (b) (9) and (10) of this section and would not be subject to the modification criteria set forth in paragraph (b) (2) of this section.

(12) Approval to construct or modify shall become invalid if construction or modification is not commenced within 24 months after receipt of such approval. The Administrator may extend such time period upon satisfactory showing that an extension is justified. The applicant may apply for such an extension at the time of initial application or at any time thereafter.

(13) Approval to construct or modify shall not relieve any owner or operator of the responsibility to comply with the control strategy and all local, State and Federal regulations which are part of the applicable State implementation plan.

(14) Where the Administrator delegates the responsibility for implementing the procedures for conducting indirect source review pursuant to this paragraph to any agency, other than a regional office of the Environmental Protection Agency, the following provisions shall apply:

(i) Where the agency designated is not an air pollution control agency, such agency shall consult the appropriate State or local air pollution control agency prior to making any determination required by paragraphs (b) (4), (5), or (6) of this section. Similarly, where the agency designated does not have continuing responsibilities for land use planning, such agency shall consult with the appropriate State or local land use and transportation planning agency prior to making any determination required by paragraph (b) (9) of this section.

(ii) The Administrator of the Environmental Protection Agency shall conduct the indirect source review pursuant to this paragraph for any indirect source owned or operated by the United States Government.

(iii) A copy of the notice required pursuant to paragraph (b) (8) (ii) (c) of this section shall be sent to the Administrator through the appropriate Regional Office.

(15) In any area in which a "management of parking supply" regulation which has been promulgated by the Administrator is in effect, indirect sources which are subject to review under the terms of such a regulation shall not be required to seek review under this paragraph but instead shall be required to seek review pursuant to such management of parking supply regulation. For purposes of this paragraph, a "management of parking supply" regulation shall be any regulation promulgated by the Administrator as part of a transportation control plan pursuant to the Clean Air Act which requires that any new or modified facility containing a given number of parking spaces shall receive a permit or other prior approval, issuance of which is to be conditioned on air quality considerations.

(16) Notwithstanding any of the foregoing provisions to the contrary, the operation of this paragraph is hereby suspended pending further notice. No facility which commences construction prior to the expiration of the sixth month after the operation of this paragraph is reinstated (as to that type of facility) shall be subject to this paragraph.

(37 FR 10846, May 31, 1972 as amended at 40 FR 28065, July 3, 1975; 40 FR 40160, Sept. 2, 1975)

## (17.0) 52.1829 Prevention of Significant Deterioration

(b) Definitions. For the purposes of this section:

(1) "Facility" means an identifiable piece of process equipment. A stationary source is composed of one or more pollutant-emitting facilities.

(2) The phrase "Administrator" means the Administrator of the Environmental Protection Agency or his designated representative.

(3) The phrase "Federal Land Manager" means the head, or his designated representative, of any Department or Agency of the Federal Government which administers federally-owned land, including public domain lands.

(4) The phrase "Indian Reservation" means any federally-recognized reservation established by Treaty, Agreement, Executive Order, or Act of Congress.

(5) The phrase "Indian Governing Body" means the governing body of any tribe, band, or group of Indians subject to the jurisdiction of the United States and recognized by the United States as possessing power of self-government.

(6) "Construction" means fabrication, erection or installation of a stationary source.

(7) "Commenced" means that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

(c) Area designation and deterioration increment

(1) The provisions of this paragraph have been incorporated by reference into the applicable implementation plans for various States, as provided in Subparts B through DDD of this part. Where this paragraph is so incorporated, the provisions shall also be applicable to all lands owned by the Federal Government and Indian Reservations located in such State. The provisions of this paragraph do not apply in those counties or other functionally equivalent areas that pervasively exceeded any national ambient air quality standards during 1974 for sulfur dioxide or particulate matter and then only with respect to such pollutants. States may notify the Administrator at any time of those areas which exceeded the national standards during 1974 and therefore are exempt from the requirements of this paragraph.

(2) (i) For purposes of this paragraph, areas designated as Class I or II shall be limited to the following increases in pollutant concentration occurring since January 1, 1975:

Area Designations

| Pollutant | Class I ($ug/m^3$) | Class II ($ug/m^3$) |
|---|---|---|
| Particulate matter: | | |
| Annual geometric mean .......... | 5 | 10 |
| 24-hr maximum .................. | 10 | 30 |
| Sulfur dioxide: | | |
| Annual arithmetic mean .......... | 2 | 15 |
| 24-hr maximum ................... | 5 | 100 |
| 3-hr maximum .................. | 25 | 700 |

(ii) For purposes of this paragraph, areas designated as Class III shall be limited to concentrations of particulate matter and sulfur dioxide no greater than the national ambient air quality standards.

(iii) The air quality impact of sources granted approval to construct or modify prior to January 1, 1975 (pursuant to the approved new source review procedures in the plan) but not yet operating prior to January 1, 1975, shall not be counted against the air quality increments specified in paragraph (c) (2) (i) of this section.

(3) (i) All areas are designated Class II as of the effective date of this paragraph. Redesignation may be proposed by the respective States, Federal Land Manager, or Indian Governing Bodies, as provided below, subject to approval by the Administrator.

(ii) The State may submit to the Administrator a proposal to redesignate areas of the State Class I, Class II, or Class III, provided that:

(a) At least one public hearing is held in or near the area affected and this public hearing is held in accordance with procedures established in 51.4 of this chapter, and

(b) Other States, Indian Governing Bodies, and Federal Land Managers whose lands may be affected by the proposed redesignation are notified at least 30 days prior to the public hearing, and

(c) A discussion of the reasons for the proposed redesignation is available for public inspection at least 30 days prior to the hearing and the notice announcing the hearing contains appropriate notification of the availability of such discussion, and

(d) The proposed redesignation is based on the record of the State's hearing, which must reflect the basis for the proposed redesignation, including consideration of (1) growth anticipated in the area, (2) the social, environmental, and economic effects of such redesignation upon the area being proposed for redesignation and upon other areas and States, and (3) any impacts of such proposed redesignation upon regional or national interests.

(e) The redesignation is proposed after consultation with the elected leadership of local and other substate general purpose governments in the area covered by the proposed redesignation.

(iii) Except as provided in paragraph (c) (3) (iv) of this section, a State in which lands owned by the Federal Government are located may submit to the Administrator a proposal to redesignate such lands Class I, Class II, or Class III in accordance with subdivision (ii) of this subparagraph provided that:

(a) The redesignation is consistent with adjacent State and privately owned land, and

(b) Such redesignation is proposed after consultation with the Federal Land Manager.

(iv) Notwithstanding subdivision (iii) of this subparagraph, the Federal Land Manager may submit to the Administrator a proposal to redesignate any Federal lands to a more restrictive designation than would otherwise be applicable provided that:

(a) The Federal Land Manager follows procedures equivalent to those required of States under paragraph (c) (3) (ii) and,

(b) Such redesignation is proposed after consultation with the State(s) in which the Federal Land is located or which border the Federal Land.

(v) Nothing in this section is intended to convey authority to the States over Indian Reservations where States have not assumed such authority under other laws nor is it intended to deny jurisdiction which States have assumed under other laws. Where a State has not assumed jurisdiction over an Indian Reservation the appropriate Indian Governing Body may submit to the Administrator a proposal to redesignate areas Class I, Class II, or Class III, provided that:

(a) The Indian Governing Body follows procedures equivalent to those required of States under paragraph (c) (3) (ii) and,

(b) Such redesignation is proposed after consultation with the State(s) in which the Indian Reservation is located or which border the Indian Reservation and, for those lands held in trust, with the approval of the Secretary of the Interior.

(vi) The Administrator shall approve, within 90 days, any redesignation proposed pursuant to this subparagraph as follows:

(a) Any redesignation proposed pursuant to subdivisions (ii) and (iii) of this subparagraph shall be approved unless the Administrator determines (1) that the requirements of subdivisions (ii) and (iii) of this subparagraph have not been complied with, (2) that the State has arbitrarily and capriciously disregarded relevant considerations set forth in subparagraph (3) (ii) (d) of this paragraph, or (3) that the State has not requested and received delegation of responsibility for carrying out the new source review requirements of paragraphs (d) and (e) of this section.

(b) Any redesignation proposed pursuant to subdivision (iv) of this subparagraph shall be approved unless he determines (1) that the requirements of subdivision (iv) of this subparagraph have not been complied with, or (2) that the Federal Land Manager has arbitrarily and capriciously disregarded relevant considerations set forth in subparagraph (3) (ii) (d) of this paragraph.

(c) Any redesignation submitted pursuant to subdivision (v) of this subparagraph shall be approved unless he determines (1) that the requirements of subdivision (v) of this subparagraph have not been complied with, or (2) that the Indian Governing Body has arbitrarily and capriciously disregarded relevant considerations set forth in subparagraph (3) (ii) (d) of this paragraph.

(d) Any redesignation proposed pursuant to this paragraph shall be approved only after the Administrator has solicited written comments from affected Federal agencies and Indian Governing Bodies and from the public on the proposal.

(e) Any proposed redesignation protested to the proposing State, Indian Governing Body, or Federal Land Manager and to the Administrator by another State or Indian Governing Body because of the effects upon such protesting State or Indian Reservation shall be approved by the Administrator only if he determines that in his judgment the redesignation appropriately balances considerations of growth anticipated in the area proposed to be redesignated; the social, environmental and economic effects of such redesignation upon the area being redesignated and upon other areas and States; and any impacts upon regional or national interests.

(f) The requirements of paragraph (c) (3) (vi) (a) (3) that a State request and receive delegation of the new source review requirements of this section as a condition to approval of a proposed redesignation, shall include as a minimum receiving the administrative and technical functions of the new source review. The Administrator will carry out any required enforcement action in cases where the State does not have adequate legal authority to initiate such actions. The Administrator may waive the requirements of paragraph (c) (3) (vi) (a) (3) if the State Attorney-General has determined that the State cannot accept delegation of the administrative/technical functions.

(vii) If the Administrator disapproves any proposed area designation under this subparagraph, the State, Federal Land Manager or Indian Governing Body, as appropriate, may resubmit the proposal after correcting the deficiencies noted by the Administrator or reconsidering any area designation determined by the Administrator to be arbitrary and capricious.

(d) Review of new sources

(1) The provisions of this paragraph have been incorporated by reference into the applicable implementation plans for various States, as provided in Subparts B through DDD of this part. Where this paragraph is so incorporated, the requirements of this paragraph apply to any new or modified stationary source of the type identified below which has not commenced construction or modification prior to June 1, 1975 except as specifically provided below. A

source which is modified, but does not increase the amount of sulfur oxides or particulate matter emitted, or is modified to utilize an alternative fuel, or higher sulfur content fuel, shall not be subject to this paragraph.

(i) Fossil-Fuel Steam Electric Plants of more than 1000 million B.T.U. per hour heat input.

(ii) Coal Cleaning Plants.

(iii) Kraft Pulp Mills.

(iv) Portland Cement Plants.

(v) Primary Zinc Smelters.

(vi) Iron and Steel Mills.

(vii) Primary Aluminum Ore Reduction Plants.

(viii) Primary Copper Smelters.

(ix) Municipal Incinerators capable of charging more than 250 tons of refuse per 24 hour day.

(x) Sulfuric Acid Plants.

(xi) Petroleum Refineries.

(xii) Lime Plants.

(xiii) Phosphate Rock Processing Plants.

(xiv) By-Product Coke Oven Batteries.

(xv) Sulfur Recovery Plants.

(xvi) Carbon Black Plants (furnace process).

(xvii) Primary Lead Smelters.

(xviii) Fuel Conversion Plants.

(xix) Ferroalloy production facilities commencing construction after October 5, 1975.

(2) No owner or operator shall commence construction or modification of a source subject to this paragraph unless the Administrator determines that, on the basis of information submitted pursuant to subparagraph (3) of this paragraph:

(i) The effect on air quality concentration of the source or modified source, in conjunction with the effects of growth and reduction in emissions after January 1, 1975, of other sources in the area affected by the proposed source, will not violate the air quality increments applicable in the area where the source will be located nor the air quality increments applicable in any other areas. The analysis of emissions growth and reduction after January 1, 1975, of other sources in the areas affected by the proposed source shall include all new and modified sources granted approval to construct pursuant to this paragraph; reduction in emissions from existing sources which contributed to air quality during all or part of 1974; and general commercial, residential, industrial, and other sources of emissions growth not exempted by paragraph (c) (2) (111) of this section which has occurred since January 1, 1975.

(ii) The new or modified source will meet an emission limit, to be specified by the Administrator as a condition to approval, which represents that level of emission reduction which would be achieved by the application of best available control technology, as defined in 52.01 (f), for particulate matter and sulfur dioxide. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular class of sources would make the imposition of an emission standard infeasible, he may instead prescribe a design or equipment standard requiring the application of best available control technology. Such standard shall to the degree possible set forth the emission reductions achievable by implementation of such design or equipment, and shall provide for compliance by means which achieve equivalent results.

(iii) With respect to modified sources, the requirements of subparagraph (2) (ii) of this paragraph shall be applicable only to the facility or facilities from which emissions are increased.

(3) In making the determinations required by paragraph (d) (2) of this section, the Administrator shall, as a minimum, require the owner or operator of the source subject to this paragraph to submit: site information, plans, description, specifications, and drawings showing the design of the source; information necessary to determine the impact that the construction or modification will have on sulfur dioxide and particulate matter air quality levels; and any other information necessary to determine that best available control technology will be applied. Upon request of the Administrator, the owner or operator of the source shall provide information on the nature and extent of general commercial, residential, industrial, and other growth which has occurred in the area affected by the source's emissions (such area to be specified by the

Administrator) since January 1, 1975.

(4) (i) Where a new or modified source is located on Federal Lands, such source shall be subject to the procedures set forth in paragraphs (d) and (e) of this section. Such procedures shall be in addition to applicable procedures conducted by the Federal Land Manager for administration and protection of the affected Federal Lands. Where feasible, the Administrator will coordinate his review and hearings with the Federal Land Manager to avoid duplicate administrative procedures.

(ii) New or modified sources which are located on Indian Reservations shall be subject to procedures set forth in paragraphs (d) and (e) of this section. Such procedures shall be administered by the Administrator in cooperation with the Secretary of the Interior with respect to lands over which the State has not assumed jurisdiction under other laws.

(iii) Whenever any new or modified source is subject to action by a Federal Agency which might necessitate preparation of an environmental impact statement pursuant to the National Environmental Policy Act (42 U.S.C. 4321), review by the Administrator conducted pursuant to this paragraph shall be coordinated with the broad environmental reviews under that Act, to the maximum extent feasible and reasonable.

(5) Where an owner or operator has applied for permission to construct or modify pursuant to this paragraph and the proposed source would be located in an area which has been proposed for redesignation to a more stringent class (or the State, Indian Governing Body, or Federal Land Manager has announced such consideration), approval shall not be granted until the Administrator has acted on the proposed redesignation.

(e) Procedures for public participation

(1) (i) Within 20 days after receipt of an application to construct, or any addition to such application, the Administrator shall advise the owner or operator of any deficiency in the information submitted in support of the application. In the event of such a deficiency, the date of receipt of the application for the purpose of paragraph (e) (1) (ii) of this section shall be the date on which all required information is received by the Administrator.

(ii) Within 30 days after receipt of a complete application, the Administrator shall:

(a) Make a preliminary determination whether the source should be approved, approved with conditions, or disapproved.

(b) Make available in at least one location in each region in which the proposed source would be constructed, a copy of all materials submitted by the owner or operator, a copy of the Administrator's preliminary determination and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and

(c) Notify the public, by prominent advertisement in newspaper of general circulation in each region in which the proposed source would be constructed, of the opportunity for written public comment on the information submitted by the owner or operator and the Administrator's preliminary determination on the approvability of the source.

(iii) A copy of the notice required pursuant to this subparagraph shall be sent to the applicant and to officials and agencies having cognizance over the locations where the source will be situated as follows: State and local air pollution control agencies, the chief executive of the city and county; any comprehensive regional land use planning agency; and any State, Federal Land Manager or Indian Governing Body whose lands will be significantly affected by the source's emissions.

(iv) Public comments submitted in writing within 30 days after the date such information is made available shall be considered by the Administrator in making his final decision on the application. No later than 10 days after the close of the public comment period, the applicant may submit a written response to any comments submitted by the public. The Administrator shall consider the applicant's response in making his final decision. All comments shall be made available for public inspection in at least one location in the region in which the source would be located.

(v) The Administrator shall take final action on an application within 30 days after the close of the public comment period. The Administrator shall notify the applicant in writing of his approval, conditional approval, or denial of the application, and shall set forth his reasons for conditional approval or denial. Such notification shall be made available for public inspection in at least one location in the region in which the source would be located.

(vi) The Administrator may extend each of the time periods specified in paragraph (e) (1) (ii), (iv), or (v) of this section by no more than 30 days or such other period as agreed to by the applicant and the Administrator.

(2) Any owner or operator who constructs, modifies, or operates a stationary source not in accordance with the application, as approved and conditioned by the Administrator, or any owner or operator of a stationary source subject to this paragraph who commences construction or modification after June 1, 1975, without applying for and receiving approval hereunder, shall be subject to enforcement action under section 113 of the Act.

(3) Approval to construct or modify shall become invalid if construction or expansion is not commenced within 18 months after receipt of such approval or if construction is discontinued for a period of 18 months or more. The Administrator may extend such time period upon a satisfactory showing that an extension is justified.

(4) Approval to construct or modify shall not relieve any owner or operator of the responsibility to comply with the control strategy and all local, State, and Federal regulations which are part of the applicable State Implementation Plan.

(f) Delegation of authority

(1) The Administrator shall have the authority to delegate responsibility for implementing the procedures for conducting source review pursuant to paragraphs (d) and (e), in accordance with subparagraphs (2), (3), and (4) of this paragraph.

(2) Where the Administrator delegates the responsibility for implementing the procedures for conducting source review pursuant to this section to any Agency, other than a regional office of the Environmental Protection Agency, the following provisions shall apply:

(i) Where the agency designated is not an air pollution control agency, such agency shall consult with the appropriate State and local air pollution control agency prior to making any determination required by paragraph (d) of this section. Similarly, where the agency designated does not have continuing responsibilities for managing land use, such agency shall consult with the appropriate State and local agency which is primarily responsible for managing land use prior to making any determination required by paragraph (d) of this section.

(ii) A copy of the notice pursuant to paragraph (e) (1) (ii) (c) of this section shall be sent to the Administrator through the appropriate regional office.

(3) In accordance with Executive Order 11752, the Administrator's authority for implementing the procedures for conducting source review pursuant to this section shall not be delegated, other than to a regional office of the Environmental Protection Agency, for new or modified sources which are owned or operated by the Federal government or for new or modified sources located on Federal lands; except that, with respect to the latter category, where new or modified sources are constructed or operated on Federal lands pursuant to leasing or other Federal agreements, the Federal land Manager may at his discretion, to the extent permissible under applicable statutes and regulations, require the lessee or permittee to be subject to a designated State or local agency's procedures developed pursuant to paragraphs (d) and (e) of this section.

(4) The Administrator's authority for implementing the procedures for conducting source review pursuant to this section shall not be redelegated, other than to a regional office of the Environmental Protection Agency, for new or modified sources which are located on Indian reservations except where the State has assumed jurisdiction over such land under other laws, in which case the Administrator may delegate his authority to the States in accordance with subparagraphs (2), (3), and (4) of this paragraph.

(39 FR 42514, Dec. 5, 1974; 40 FR 2802, Jan. 16, 1975, as amended at 40 FR 24535, June 9, 1975; 40 FR 25005, June 12, 2975; 40 FR 42012, Sept. 10, 1975)